Professional™
300 series

APPLICATIONS STARTER KIT
USER'S GUIDE
HARD DISK SYSTEM

Digital Classified Software

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APPLICATIONS STARTER KIT
USER'S GUIDE
HARD DISK SYSTEM

Getting Started

The Applications Starter Kit helps you get started using your Professional personal computer. In addition, you gain valuable experience working with these four popular applications for personal computers.

If you are a professional businessperson, manager, or administrator, these applications are tools for improving the way you process information.

WHAT DO I NEED?

To use the Applications Starter Kit, you need a Professional 350 hard disk system running P/OS software, Version 1.7 or later. Your system must include the Floating Point Adapter and Memory Module. It is recommended that you also have an LA50, LA100, or LQP02 printer for generating printed copies of text files and reports. PRO/Graph users may want to add such optional equipment as a color monitor and the Extended Bit Map Option, to display color graphs and charts. In addition, either of the following plotters can be attached to the Professional, for plotting graphs: Hewlett-Packard Model 7470A (2 pens) or Model 7475A (6 pens).

WHAT'S IN THE STARTER KIT?

The Starter Kit consists of:

☐ *PROSE*—an application program that allows you to create and edit text files. You change text with PROSE by choosing commands from menus and by using function keys.

□ *PRO/DataManager*—a data base management application program that manages your information using forms you design. With PRO/DataManager, you enter, retrieve, sort, select, and change information that is summarized in printed reports.

□ *PRO/Spreadsheet*—an electronic spreadsheet application for numerical calculations and financial analysis. With PRO/Spreadsheet, you estimate, calculate, and generate printed financial reports, using built-in functions and format display controls.

□ *PRO/Graph*—a business graphics application that generates pie charts, bar, and line graphs. With PRO/Graph, you design and customize charts and graphs for business presentations or reports.

□ *DECLander*—Try to land the spacecraft safely on the moon! DECLander tests your piloting abilities and is a fun way to get acquainted with the Professional.

Data can be shared by PRO/DataManager, PRO/Spreadsheet, and PRO/Graph. Information generated by one application can be passed to another application for processing by using compatible files called *table files*. So, for example, financial information generated by PRO/Spreadsheet can be graphed by PRO/Graph or manipulated by PRO/DataManager.

Each application includes extensive on-screen HELP messages that you display simply by pressing the HELP key.

WHAT'S ON THE DISKETTES?

The Applications Starter Kit is packaged on four diskettes:

Name of diskette	What it contains
Applications Starter Kit 1 of 4	PRO/Spreadsheet, PRO/Graph
Applications Starter Kit 2 of 4	PRO/DataManager
Applications Starter Kit 3 of 4	PROSE
Applications Starter Kit 4 of 4	DECLander, Sample data files

You install the diskettes using the standard installation procedure as described in the *Professional 300 Series User's Guide for Hard Disk System*.

If you encounter a problem, check the *Professional 300 Series Owner's Manual* for tips on solving the problem yourself, or refer to the Owner's Manual for the telephone number of the nearest Digital service center.

BEFORE YOU START

Before using the Starter Kit, familiarize yourself with the *Professional 300 Series User's Guide for Hard Disk System*, particularly the sections on installing applications and choosing from menus.

You should also make backup copies of all the Starter Kit diskettes, in case any of the applications is accidentally deleted or destroyed on the disk. Perform the backup procedure as soon as you have installed all the applications. Choose the "Copy Diskette" utility under "Disk/Diskette Services" from the P/OS Main Menu. The User's Guide explains how to do this.

Diskette 4 includes some document files which explain how to use the sample data files. You should print or display these files before using the sample data files.

USING THIS BOOK

Each application is described in a separate section of this book. Look at the beginning of each section for a detailed table of contents. A glossary at the end of each section defines terms used by that application. Glossary terms appear in italics the first time they are mentioned in the text. For your convenience, you will also find a separate index at the end of each section.

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PROSE

Using PROSE, you can prepare memos, reports, *programs*, and other kinds of text. You can create, edit, move, replace, and format text. You use PROSE by choosing from *menus* and by using some of the *function keys* on your *keyboard*.

With PROSE, the text you prepare appears on the screen in the same format it has when printed on a printer. In addition, the screen display shows where pages end for printing, if you have put in your own page breaks. This part of the screen display does not print out.

This chapter is divided into two sections:

- □ *Elementary PROSE*—all you need to know to get an editing job done.

- □ *More advanced PROSE*—additional functions that make editing easier and allow you to change your text format.

ELEMENTARY PROSE

PROSE must be *installed* on your Professional before you can use it. Refer to "Install Application" in Chapter 7 of the *Professional 300 Series User's Guide for Hard Disk System* for installation instructions.

To use PROSE, first choose it from the Main Menu[1] by moving the pointer to "PROSE" with the ↓ key. Then press DO and the PROSE Menu appears.
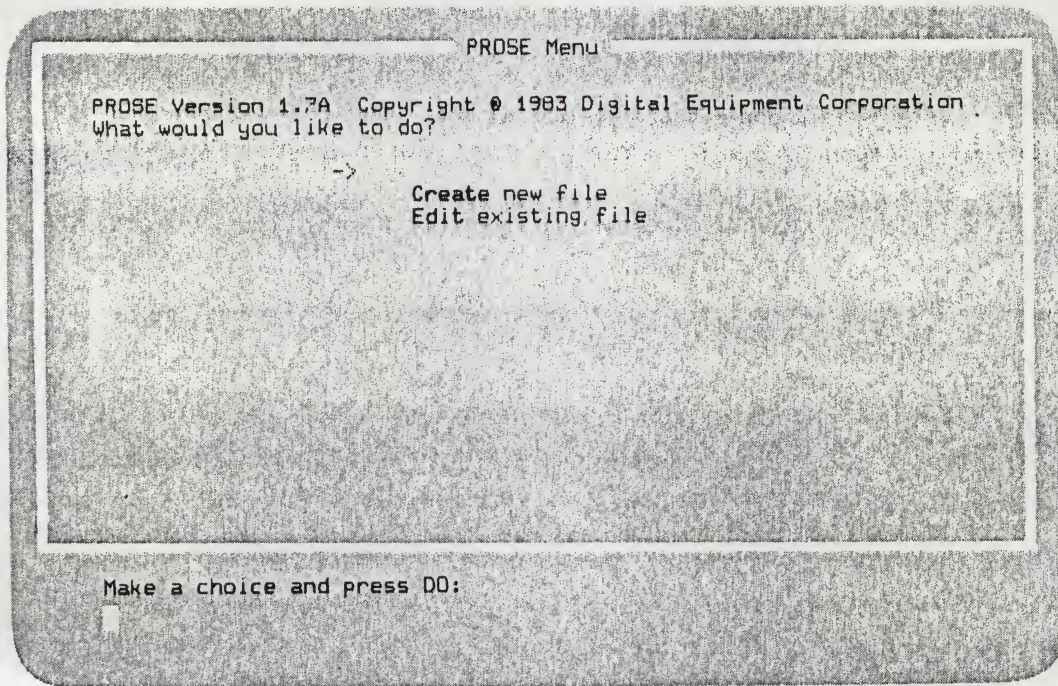
---

[1]If PROSE was installed on an additional applications menu, then choose from that menu. Also, since *application* names can be changed at install time, your PROSE may have a different name.

The PROSE Menu

The PROSE Menu looks like this:

```
┌─────────────────────────── PROSE Menu ────────────────────────────┐
│                                                                    │
│  PROSE Version 1.7A  Copyright © 1983 Digital Equipment Corporation │
│  What would you like to do?                                        │
│                    ->                                              │
│                          Create new file                          │
│                          Edit existing file                       │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
├────────────────────────────────────────────────────────────────────┤
│  Make a choice and press DO:                                       │
│  ▯                                                                 │
└────────────────────────────────────────────────────────────────────┘
```
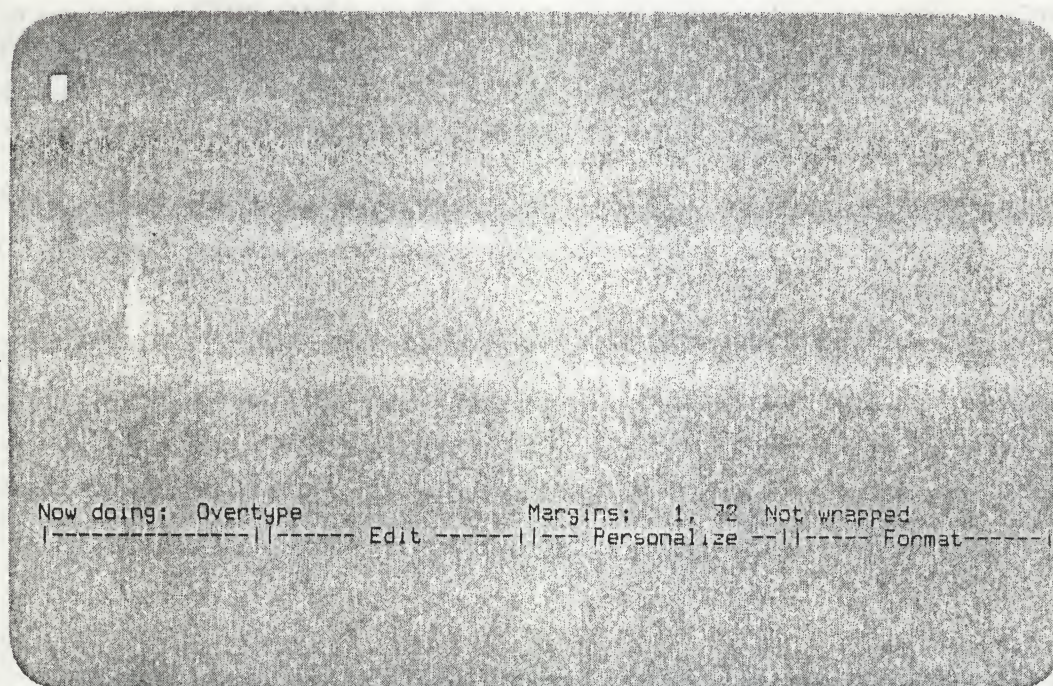
If you want to create a memo or other new text, choose "Create new file." If you want to alter an existing text file, choose "Edit existing file."
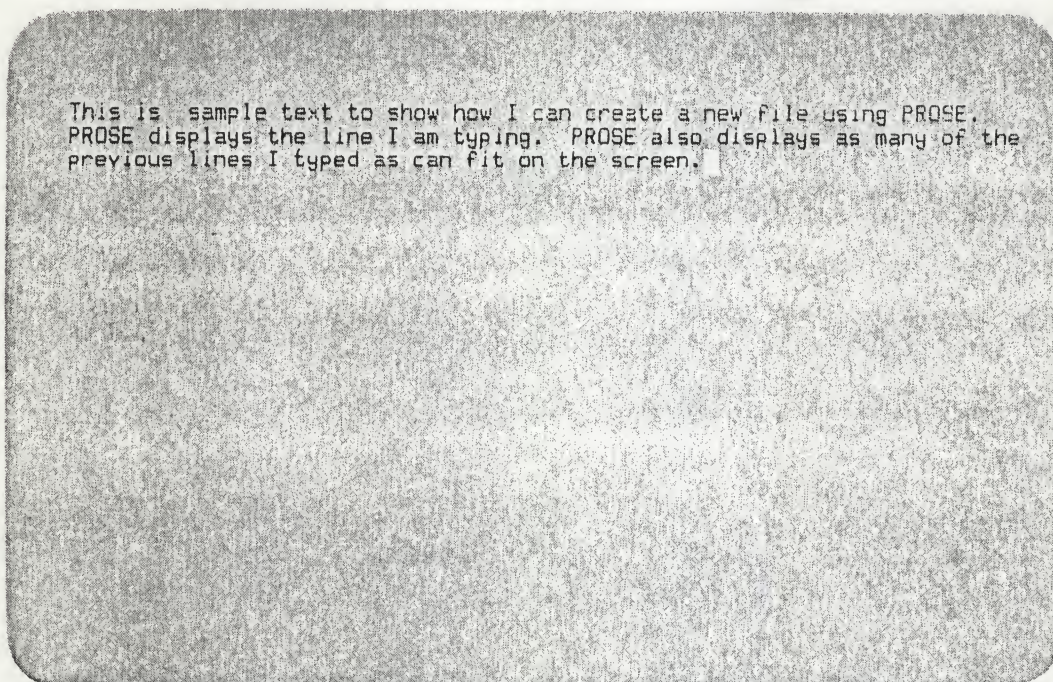
Create New File

If you choose "Create new file" from the PROSE Menu, the screen looks like this:

```
Now doing:  Overtype                    Margins:   1, 72  Not wrapped
|-------------------||------- Edit ------||--- Personalize --||----- Format------|
```

The blank space is for you to type in your text. For example,

```
This is  sample text to show how I can create a new file using PROSE.
PROSE displays the line I am typing.  PROSE also displays as many of the
previous lines I typed as can fit on the screen.
```

Once you are creating or editing a file, you can press HELP, if you want, to display the PROSE HELP Menu.

When you create a file, the left margin is at the first column on the screen, and the right margin is at the 72nd column. These are the *default* margins: you have them unless you explicitly change them using the "Margin change/*word wrap*" additional option. (The Margin Change/Word Wrap section explains how to change margins.)

Separate paragraphs with a blank line. When you press the RETURN key, PROSE moves the *cursor* to the beginning of the left margin of the next line. Press RETURN twice to begin a new paragraph.

In PROSE, the TAB key by default moves the cursor over every eight columns, starting at column 9. For example, pressing the TAB key while the cursor is in a column from 1 to 8 moves the cursor to column 9. PROSE also considers the left margin a tab stop. To change your tab stops, use the PROSE Additional Options Personalize Menu described in this chapter. Tab settings you may have made with Set-up Menu A do not affect the TAB key when you are in PROSE.

To be compatible with the way PROSE fills text when you make changes, you should type in two spaces after the end of each sentence.

Any time you make an error or attempt to do something that isn't possible, PROSE displays a message on the bottom line of your screen. Press RESUME to continue after a message appears or press HELP for more information.

The status line in reverse video at the bottom of the screen will not appear in your text. This line contains the following information:

Now doing:	Tells you what you are doing at the moment. If you are entering text, the word "overtype" appears, to show that you are in *overtype mode*. (You are in overtype mode unless you press INSERT HERE.) If you perform a function, such as find a word or insert text, the function name appears instead of the word "overtype."
Margins:	Tells you the columns delimiting the left and right margins, respectively, of the paragraph in which the cursor is currently located. In the example above, the left margin is at column 1 and the right margin at column 72.
Wrapped or not wrapped:	Tells you whether word wrap is on or off for the paragraph the cursor is in.

Edit an Existing File

If you choose "Edit an existing file" from the PROSE Menu, a list of the files in your current volume and *directory* appears. If the file is in this directory, move the pointer down to choose the file you want to edit and press DO.

To choose a file from a different directory, press ADDTNL OPTIONS. Choose the option "Choose a different directory/volume" and press DO. When the directory selection menu appears, choose the directory you want and press DO. When the file selection menu appears, choose the file you want to edit and press DO.

When the file is displayed[1] on your screen, you can add text, change text, and so on.

Moving the Cursor

The cursor marks the spot where the next character you type will appear. To change any text you have already entered, you have to first move the cursor to the text to be changed.

You move the cursor around in your text by pressing the arrow keys. Each time you press an arrow key, the cursor moves one character or one line in the direction of the arrow. Holding down an arrow key causes the cursor to move rapidly in the direction of the arrow. With a little practice, you will be able to move the cursor to the spot you want by holding down an arrow key for the appropriate length of time.

To move the cursor through more than one screen of text, press PREV SCREEN to move backward and NEXT SCREEN to move forward. If there is not enough text to allow this, the cursor will move to either the beginning (for PREV SCREEN) or the end (for NEXT SCREEN) of the text.

You can move the cursor anywhere on the screen. You cannot insert text beyond your right margin in a word wrapped paragraph or on the status line.

Deleting Characters with the Delete Key

If you make typing errors while entering your text, use the delete key, labeled ⊲X⏌. This key erases the character to the left of the cursor. You can hold down the delete key to delete a series of characters. The delete key works like a space bar only in the reverse direction.

---

[1]You may see some blinking characters in the text display. These represent control characters. Refer to documents describing the *system* or application that created the file for more information about control characters. You can enter any control character using PROSE.

The following is an example of using the ⊲X⊳ key:

1. Before delete;

   ```
   I want to delete some characters I just tiped rong.
   ```

2. Press ⊲X⊳ 14 times.
   After delete:

   ```
   I want to delet some characters I just
   ```

Typing Over Existing Text

In overtype mode—which is in effect unless you press INSERT HERE—you can replace text by typing over it. You do not have to delete the original text. For example,

1. Move the cursor to the spot where you want to overtype:

   ```
   This is some text to practice inserting in overtype mode.
   ```

2. Type in the new text. It replaces the existing text:

   ```
   This is some text to see what happens when I type over other text.
   ```

You can replace text with spaces by overtyping with the space bar.

Inserting Text with INSERT HERE

When you want to insert new text or spaces into existing text without erasing the original text, use the INSERT HERE key. To insert new text into existing text:

1. Move the cursor to the spot where you want to insert the text. For example,

   ```
   Let's see how I insert new text into existing text.
   ```

2. Press INSERT HERE. Any existing text to the right of the cursor moves temporarily to the next line, leaving an open space. For example,

   ```
   Let's see how I
   insert new text into existing text.
   ```

3. Type in the text you want to insert and include any spaces you need. For example,

   ```
   Let's see how I
   insert new text into existing text.
   ```

   Notice that the newly inserted text is in reverse video.

4. When you finish inserting the new text, press **DO**. The open space closes up, and the inserted text is no longer in reverse video. If the paragraph is word wrapped, the rest of it "fills" so that there are no unnecessary spaces. For example,

    ```
    Let's see how I can insert new text into existing text.
    ```

    When filling existing text, PROSE leaves two spaces after any period, colon, exclamation point, or question mark that is followed by a space.

    When inserting text in a paragraph that is not word wrapped, press **RETURN** after inserting to move the cursor to a new line. In this case, when you press **DO**, the open space created when you pressed **INSERT HERE** closes up, but the rest of the paragraph remains the same as before.

In insert mode, you cannot use the arrow, **PREV SCREEN**, **NEXT SCREEN**, or **FIND** keys to move the cursor around in your text. You can use the ⟨X⟩ key, but only to delete text just inserted in insert mode.

Deleting Segments of Text Using REMOVE

To remove parts of text you have already created, use the **REMOVE** key. Here is how to delete a text segment step by step:

1. Using the arrow, **PREV SCREEN**, **NEXT SCREEN**, or **FIND** keys, move the cursor to one end of the segment to be deleted; it does not matter which end. For example,

    ```
    This is some text to delete.  This is some more text, but I do not want to
    delete this.
    ```

2. Press **REMOVE**.

3. Using the arrow, **PREV SCREEN**, or **NEXT SCREEN** keys, move the cursor to the other end of the segment to be deleted. The segment can be any length. For example,

    ```
    ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓  This is some more text, but I do not want to
    delete this.
    ```

    The segment becomes highlighted in reverse video as you move the cursor. (Press **CANCEL** to undo the selection.)

4. Press **DO**. The selected text disappears. For example,

    ```
    This is some more text, but I do not want to
    delete this.
    ```
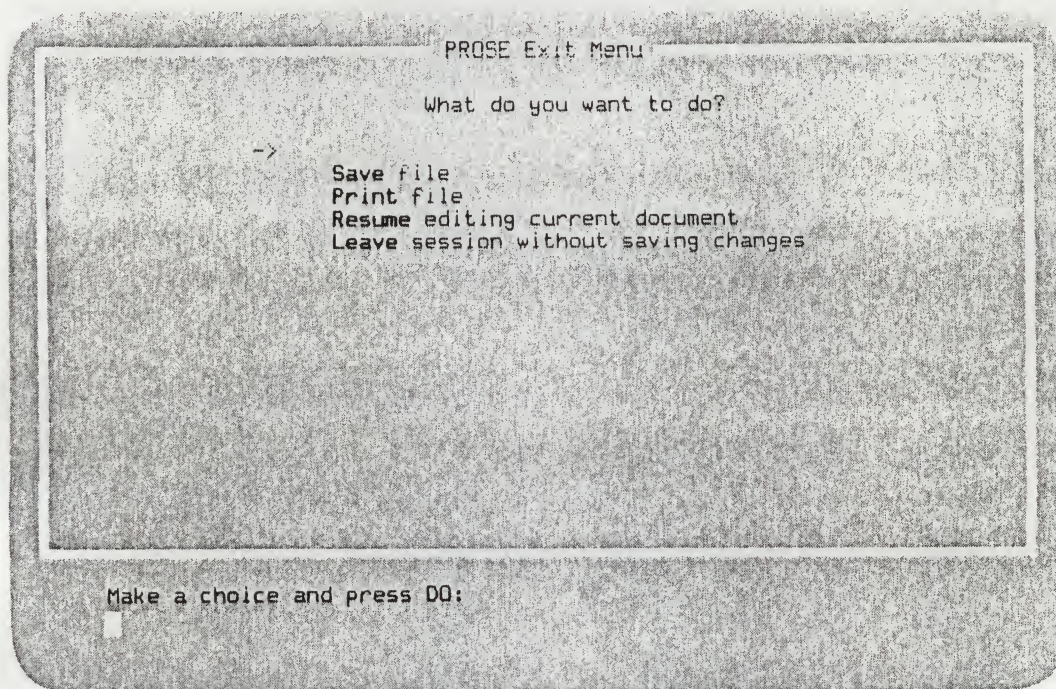
If the paragraph is word wrapped, any open spaces created by the deletion close up after you press **DO**, and the rest of the paragraph fills. If the paragraph is not word wrapped, the open space closes up, but the rest of the paragraph is not changed.

Exit Menu

Whenever you want to exit PROSE, press the **EXIT** key. The Exit Menu appears:

```
                        PROSE Exit Menu

                     What do you want to do?

        ->
                Save file
                Print file
                Resume editing current document
                Leave session without saving changes
```

```
Make a choice and press DO:
```

Save File

Choose "Save file" to store your text file in the current directory and volume (or another specified directory and volume). When you choose "Save file," the following question appears if there are any nondefault word wrap or margin settings in the file:

Save special word wrap/margin settings? (YES or NO)

Type YES (upper- or lowercase) and press **DO** (or just press **DO**) unless you want to return to only the default settings (72-column margins and word wrap off).

If you type NO and press **DO**, nondefault margin and word wrap settings will not be in the file the next time you edit it. The file will still look the same if you print it or transfer it, but if you try to edit it again, you will get unexpected results.

The main reason for removing these settings is to allow you to use *PRO/Communications* to transfer the file to a computer that does not use PROSE. Or, if you want to use an application that does not interpret the internal setting indications in the same way as PROSE, you would want to remove the settings.

After you answer the word wrap/margin question, a *form* appears requesting a file name. For example:

```
                      Name a File Form
               Enter a new file name and press DO.


         Current directory is USERFILES on Volume BIGVOLUME


                  File name:


                  File type: Document






                               Additional Options available
```

1. Type in the name (one to nine letters and/or numbers) you want to give this text. If this is a previously created file, the existing name appears on the form. In this case you can either leave it as it is, or change it by deleting the name and typing in a new name.[1]

2. Press DO. The file is saved with the name you chose, and the PROSE Menu reappears.

The default type is document. You only need to change the type if you are creating a *BASIC* program or some other special kind of file. To change the file type or directory, press ADDTNL OPTIONS before typing in the file name and select the appropriate additional option.

---

[1]This is useful for form letters or letterheads. For example, create one file as a letterhead. Then, in another editing session, add the letter contents for the particular person you are writing to, giving the new file a different name. You still have the letterhead for future use.

If you are working on a previously created file, choosing "Save file" creates a new version of your file. *P/OS* saves the previous version as well. You should delete old versions you no longer need so that you have more free space. You can use "Clean up old file versions" from the File Services Menu to delete all the old versions of a file.

Print File

Choose "Print file" to print your text on the printer. (You can only print your text in this way if you have a printer connected to your system unit.) Wait until the printer is not busy to use "Print file." When printing begins, the Exit Menu reappears. At this point, your file is still available for further editing or for saving. If you want to both print and save, choose "Save file" after you choose "Print file."

"Print file" is useful for printing the current draft of a document. If you choose "Resume editing current document" after "Print file," you can look at your printout as you continue preparing your text.

If you want to print your file at a later time, use the P/OS print services. If you have communication services, you can also transfer files to another computer to print on printers attached to the other computer.

Leave Session without Saving Changes

When you choose "Leave session without saving changes," you lose the results of the work you did during that session. If this was the first session on that text, you lose everything you entered. If you were working on an existing file, you lose only the changes and additions made during that session.

This is useful:

- If you are experimenting with PROSE to see how it works and do not want to save what you typed.
- If you want to print a document without saving it.
- If you made a lot of mistakes in your text and want to start again.

When you choose "Leave session without saving changes," the following question appears:

> Do you really want to discard edits from this session? (YES or NO)

Type YES (using either upper- or lowercase) and press **DO** to leave this session without saving changes and return to the PROSE Menu.

Type NO and press **DO** (or just press **DO**) to return to the Exit Menu *without* losing your changes.

Resume Editing Current Document

Choose "Resume editing current document" to go back to your current editing session. This is useful if you change your mind about exiting, or if you are using the Exit Menu for printing what you have done so far. When you press **DO**, the file you were working on reappears.

MORE ADVANCED PROSE

After you have used PROSE for a while, you may want to use its full potential. For example, you may want to move text around without retyping. Or, you may want to search for a particular word without moving the cursor with the arrow keys. You may want to tell PROSE exactly where to end each printed page in your document. PROSE can do all these things.

Locating Text Segments with FIND

Use the **FIND** key to place the cursor on the first character of a specific text segment. The **FIND** key is useful when you know what text segment you want to change, but not where it is in the document. You can also look for repeated instances of the same segment.

Since PROSE moves **forward** through the text to the next instance of the text you typed, you may want to place the cursor at the beginning of the file beforehand by using the **PREV SCREEN** key or the "Top of file" Additional Option.

When you press the **FIND** key, the following *prompt* appears:

> Enter the text to find and press DO:

Type in the word or group of characters you want to find and press **DO**. If PROSE cannot find the text, the following message appears:

> Unable to locate text

PROSE can only look for a text segment that occurs on one line. If, for example, the first word of a two-word segment is at the end of a line, PROSE will display the message "Unable to locate text." Press **RESUME** to continue after a message appears.

To search for the next instance of the same segment, press DO each time the "Enter the text to find ..." prompt appears. You can keep doing this until you get to the end of the file.

PROSE Additional Options Menus

In addition to the PROSE functions performed with the special function keys, there are several PROSE editing capabilities available from the three PROSE Additional Options Menus. When entering or editing text with PROSE, press F12, F13, or ADDTNL OPTIONS to display the menu which lists the additional option you want to use. The menu will appear at the top or the bottom of your screen, depending on the position of the cursor at the time that you press the key for that menu. This enables you to see your work while you choose from the menu. The following table shows the three menus.

Edit	Personalize	Format
Bottom of file	Columns 80/132	Center line
Relocate text	Define a key	Fill text
Top of file	List defined keys	Margin change/word wrap
	Set tab stops	Page break
	Status line ON/OFF	

If you decide not to use any additional options, press EXIT to return to your text display.

PROSE Additional Options Edit Menu

You display this menu by pressing F12 while in PROSE. The options on the Edit Menu enable you to move the cursor and text segments from place to place in your file. The options are:

> Bottom of file
> Relocate text
> Top of file

BOTTOM OF FILE

Use "Bottom of file" to move the cursor to the last line of your file. This is useful if you want to add text, beginning at the bottom of the file.

RELOCATE TEXT

Sometimes you may want to move a text segment to another part of your file, or you may want to copy the same text to several places in your file. "Relocate text" allows you to do these things. To relocate a text segment:

1. Using the arrow, **PREV SCREEN**, **NEXT SCREEN**, or **FIND** keys, move the cursor to one end of the text you want to relocate. For example,

    ```
    This is some text to copy.  This is some more text, but I do not want to copy
    this.
    ```

2. Press **REMOVE**.

3. Using the arrow, **PREV SCREEN**, or **NEXT SCREEN** keys, move the cursor to the other end of the text you want to relocate. The text segment becomes highlighted in reverse video. For example,

    ```
    ░░░░░░░░░░░░░░░░░░░  This is some more text, but I do not want to copy
    this.
    ```

    (If you change your mind, press **CANCEL** to cancel your selection and return to the text display.)

4. Press **DO**. The highlighted text disappears.

5. Using the arrow, **PREV SCREEN**, or **NEXT SCREEN** keys, move the cursor to where you want to relocate the segment. For example,

    ```
    This is some more text, but I do not want to copy
    this.▓
    ```

    (If you want to put the text back in the original place in addition to relocating the text, leave the cursor positioned where you removed the text.)

6. Press **F12**.

7. Choose "Relocate text" and press **DO**. PROSE moves the text to the new location. For example,

    ```
    This is some more text, but I do not want to copy
    this.  This is some more text to copy.▓
    ```

    If the text is not filled properly, use "Fill text."

8. You can relocate the text as many times as you wish (until you press the **REMOVE** key again) by moving the cursor to the next place where you want the text relocated, choosing "Relocate text" from the Edit Menu, and pressing **DO**.

TOP OF FILE

Use "Top of file" to move the cursor to the top line of the file you are editing. This is useful if you want to add text, beginning at the top of your file, or before you begin locating text segments with the FIND key.

PROSE Additional Options Personalize Menu

You display this menu by pressing F13 while in PROSE. The options on the
Personalize Menu enable you to set defaults which are saved until you change
them. The options are:

    Columns 80/132
    Define a key
    List defined keys
    Set tab stops
    Status line ON/OFF

COLUMNS 80/132

When you select "Columns 80/132" and press DO, the number of columns on the screen display changes. If the display was set to 80 columns, it changes to 132 columns. If the display was set to 132 columns, it changes to 80 columns.

DEFINE A KEY

With "Define a key," you can perform up to 250 keystrokes with the pressing of a single key. Eight keys (F17, F18, F19, F20, PF1, PF2, PF3, and PF4) are user-definable. The keystrokes specified can include characters, RETURN, and function keys.

To define a key,

1. Begin typing with the cursor at the point where you will assign what you type to a user-definable key.

2. Press F13.

3. Using the arrow keys move the pointer to "Define a key."

4. Press DO.

5. Type the key sequence that you want assigned to one of the definable keys. For example, if you want to define a key to type your name and address at the top of a letter, you would type:

    ```
    Clarence Rutherford
    146 Main Street
    Anytown, U.S.A.
    ```

    Use the ⟨X] key to delete any errors you may make in typing this sequence. Your Professional keyboard will beep if you try to enter more than 250 keystrokes into a key definition.

6. Press DO when you have finished typing the key sequence. Or, press EXIT if you do not want the sequence you've just typed assigned to a user-definable key. Any text you've typed will remain on the screen.

7. At the prompt, type in a name for the sequence. This name can be up to 60 characters long, and can include letters, numbers, spaces, and punctuation.

8. Press the key to which you want the sequence assigned; F17, F18, F19, F20, PF1, PF2, PF3, and PF4 are available for this purpose. A list on the screen shows which keys are already defined. You can re-define a key if you want.

Now, any time that you are in PROSE and you press the function key you've just defined, you will see your name and address.

Note that when you press a defined key, any text will appear at the current cursor location. If the text extends beyond the right margin, you may get unexpected results.

The best method for learning the many ways that user-definable keys can work for you is to spend some time experimenting with them. Here are some possibilities:

- ☐ Using the REMOVE and DO keys, define a key to delete the current line.

- ☐ Using the INSERT HERE and RETURN keys, define a key to open up a blank line.

- ☐ Using the underscore and vertical line characters, define a key to draw a box. Or use slashes and backslashes to create triangles and diamonds.

- ☐ Replace one word that appears many times in a document with another word (for example, replace "January" with "February"). Once you've defined a key to do this, an otherwise tedious chore becomes a simple, fast, and precise operation. Use the FIND, REMOVE, INSERT HERE, and DO keys.

- ☐ Define a key to choose an additional option from the Edit, Personalize, or Format Menu. Or define a key to choose several additional options at one time.

LIST DEFINED KEYS

"List defined keys" displays a list of user-defined keys that have been created with "Define a key." Only keys which have been defined are shown on this menu.

SET TAB STOPS

Use "Set tab stops" to establish the columns where the cursor will stop each time the **TAB** key is pressed. The tab stops you set in PROSE will not affect other P/OS services. With the initial default setting, there is a tab stop at every 8 columns, starting at column 9. For example, if the cursor is in a column from 1 to 8, when you press the **TAB** key, the cursor jumps to column 9. When you select "Set tab stops," a ruler appears on your screen. Small diamonds above the ruler show the current tab stops. Using the ➡ and ⬅ keys, move the cursor across the ruler to where you want a tab; then press **SELECT**.

To remove a tab stop, move the cursor to the diamond which represents the tab stop you want to remove and press **SELECT**.

When you have selected all the desired tab stops, press **DO**.

Additional Options

Pressing **ADDTNL OPTIONS** displays a menu of the following options:

> Clear all tabs
> Reset tab stops
> Tab stop every 8 columns

"Clear all tabs" removes all tab stops.

"Reset tab stops" resets the tab stops to the settings that were in effect when you chose "Set tab stops."

"Tab stop every 8 columns" sets the tab stops to every 8 columns, beginning with column 9.

STATUS LINE ON/OFF

By initial default, 22 lines of your text are displayed on the screen. Lines 23 and 24 are reserved for the status line. If you want to display 24 lines of your text and no status line:

1. Press F13.

2. Choose "Status line ON/OFF."

When you want to display the status line again, repeat this procedure.

PROSE Additional Options Format Menu

You display this menu by pressing ADDTNL OPTIONS while in PROSE. The options on the Format Menu enable you to specify the appearance of text in your file. The options are:

Center line
Fill text
Margin change/word wrap
Page break

CENTER LINE

To use "Center line," first move the cursor to the line you want to center. Then choose "Center line" from the Format Menu. When you press **DO**, PROSE centers the line within the margins set for that paragraph.

FILL TEXT

Use "Fill text" to wrap paragraphs that allow word wrap. To fill text:

1. Using the arrow, PREV SCREEN, NEXT SCREEN, or FIND keys, move the cursor to the beginning of the paragraph you want to fill. For example,

    ```
    This is a sample of text to be filled.
    When I typed this                text in,
    I       put in a lot of          spaces and carriage returns
    that
    I do not want now.
    ```

2. Press ADDTNL OPTIONS.

3. Choose "Fill text."

4. Press DO. The paragraph fills. For example,

    ```
    This is a sample of text to be filled.  When I typed this text in, I put in a
    lot of spaces and carriage returns that I do not want now.
    ```

Note that the cursor is at the end of the filled text.

"Fill text" will not operate on text set to "no wrap," which is the default setting. Use "Margin change/word wrap" to set word wrap on for a paragraph. To get rid of spaces in paragraphs that are not wrapped, use REMOVE.

MARGIN CHANGE/WORD WRAP

When you begin creating text with PROSE, the left margin is set to column 1 and the right margin to column 72. Word wrap is off for each paragraph you enter. These are the default settings. (A blank line—two carriage returns—marks a separation between paragraphs.)

Word wrap is a very useful PROSE feature that automatically drops any word extending beyond the right margin to the beginning of the next line. You do not have to press the **RETURN** key when you get to the right margin. You should leave word wrap off for entering tables, columns of text, or programs.

To change margins or the word wrap setting for a paragraph, use "Margin change/word wrap." PROSE uses the new setting(s) for the paragraph you selected and for subsequent paragraphs (moving forward through the text) until you make a change or until there is a change saved from a previous editing session.

When you exit the session, PROSE asks you whether you want to save these word wrap and margin settings. See the section in this chapter on "Save file" for more details.

To set margins or word wrap:

1. Using the arrow, **PREV SCREEN**, **NEXT SCREEN**, or **FIND** keys, move the cursor to the first line of the paragraph or text for which you want to change margins and/or word wrap.

    If you have not yet typed in the paragraph, before changing the setting, press **RETURN** twice to indicate a new paragraph.

    If you move the cursor to a line within a paragraph, PROSE creates the new margin setting starting where the cursor is, but does not insert a blank line.

2. Press **ADDTNL OPTIONS**.

3. Choose "Margin change/word wrap."

4. Press **DO**. A ruler appears in your text display. For example,

    ```
    This is the last line of a paragraph.

    M                                                                      v
    .........1.........2.........3.........4.........5.........6..........7.......
    This is a new paragraph.  Iwant to turn word wrap on for this paragraph.
    I also want to change the margins.
    ```

Each dot or number on the ruler represents a column. The "V" symbols mark the location of the left and right margins.

5. To set a new left margin, move the cursor to the column you want and press **SELECT**. (Press **EXIT** to cancel your choice and return to the text display.)

6. The cursor is moved to the "V" marking the location of the right margin. Move the cursor to the column you want and press **SELECT**. You can use **SELECT** to toggle back and forth between margins until you're satisfied with the settings you've made.

7. If you want to change the word wrap setting, press **ADDTNL OPTIONS**. A menu appears showing the possible word wrap settings; the current word wrap setting is indicated with a diamond. Move the pointer to the choice you want and press **DO**. You are returned to the margin ruler.

8. Press **DO** when you are ready to leave "Margin change/word wrap."

    If you change the margins on a wrapped paragraph, PROSE rewraps the paragraph so that it fits within the new margins.

To find out the word wrap and margin settings for any paragraph, move the cursor to it and look at the status line.

For formatting numbered lists, move the left margin to the right, and then put the numbers to the left of the left margin. For example, set your left margin to column 5, then use the ← key to move the cursor to the left of this margin. Type in your list numbers at column 1. Start the text of your list at your left margin. Subsequent lines of text will align at column 5.

PAGE BREAK

A page break marks where you want your text to begin printing on the next page. With the LQP02 or LA100-PC printer, print services can print out a set number of lines for each page. If you want to insert special page breaks using "Page break" and are using an LQP02 or LA100-PC printer, set your printer "Top margin" to 1 and "Bottom margin" to the same number as "Page length." If you are using an LA50 printer, you should insert page breaks for every page.

To insert a page break,

1. Using the arrow, **PREV SCREEN**, **NEXT SCREEN**, or **FIND** keys, move the cursor to any spot on the first line to be printed on the next page. For example,

    ```
    This is some text.  I have written several pages of text -- this is only part
    of what I have written -- and I want to insert a page break so that the printer
    will print my text as I request.  For example,  I need to use page breaks
    to make sure that a table gets printed all on one page.
    ```

2. Press **ADDTNL OPTIONS**.

3. Choose "Page break." (Press **EXIT** to cancel the procedure and return to the text display.)

4. Press **DO**. A double line appears, showing where the page will break. For example,

    ```
    This is some text.  I have written several pages of text -- this is only part
    of what I have written -- and I want to insert a page break so that the printer
    ═══════════════════════════════════════════════════════════════════════════════
    will print my text as I request.  For example,  I need to use page breaks
    to make sure that a table gets printed all on one page.
    ```

Set page breaks in your text **after** all edits have been made, because a change in the text can affect your page breaks.

When printing files, P/OS causes the printer to jump (form feed) to the next page on encountering a page break. The double line that appears in your screen display is not printed on the paper copy.

PROSE considers a page break the start of a new paragraph.

To delete an existing page break, move the cursor to the page break and press the ⟨X⟩ key.

Glossary

application (or application program)

A computer program that meets some specific user need. For example, an application program can control an inventory or monitor a manufacturing process. Applications for the Professional are available from DIGITAL and other companies.

auxiliary keypad

The set of keys on the far right of the Professional keyboard. When you install P/OS, you use this keypad to type in the time and date. Some applications interpret these keys as special function keys; with other applications these keys do nothing.

BASIC

Beginner's All-purpose Symbolic Instruction Code: a widely used, simple programming language capable of handling industry and business applications. PRO/BASIC is a form of this language.

cursor

The blinking rectangle or underscore on the monitor screen that shows where the next typed character will appear, if appropriate.

default

Information that the Professional assumes as input if you do not explicitly provide it.

directory

> A group of files stored on a volume (a disk or diskette). A directory can include all or only some of the files on the volume.
>
> When you initialize a volume, P/OS creates a directory for you called USERFILES. You can delete this directory and you can create your own directories.

disk

> A magnetic, file-storage medium. The disk (also called hard or "Winchester" disk) is permanently precision-mounted to its drive, and has more than 12 times the storage capacity of a diskette.

diskette

> A magnetic, file-storage medium, also called floppy disk. Diskettes for the Professional are 5 1/4" in diameter and are encased in a protective cover. You store private and seldom-used files on diskettes, copy files onto them for safekeeping and use them to bring new programs to your Professional.

diskette drive

> A unit that holds and operates one or more diskettes. All Professionals have a dual diskette drive capable of holding two diskettes.

editing keypad

> The set of gray keys between the main keyboard and the auxiliary keypad. Like the keys of the auxiliary keypad, these keys can function differently for different applications.

editor

> An application program that allows you to create and modify text files. You can change text with the Professional editor (PROSE) by choosing commands from a menu and by using function keys.

file

> A collection of information treated as a unit. A file may contain a memo, a program, or other information. Its fundamental purpose is analogous to that of a conventional office file.
>
> A file is the means by which information is stored on disk or diskette so it is efficiently usable by both P/OS and a user. A file occupies one or more blocks on a volume and has a file name.

form

> A request for information that is displayed on the Professional screen when P/OS requires information that you provide.

function key

A type of key on the Professional keyboard that, when pressed, instructs P/OS or a P/OS application to do something specific. The HELP, DO, INTERRUPT, HOLD SCREEN, PRINT SCREEN, and arrow keys perform the same function all the time. Other function keys, such as PREV SCREEN, RESUME, CANCEL, EXIT, F5, F17, and so on, have functions that depend on the application currently in use.

install

(1) To copy the P/OS software from the P/OS system diskette(s) onto the disk.

(2) To copy a P/OS application from an application diskette onto the disk, integrating that application into the menu system.

keyboard

The component that enables you to communicate with the Professional. It contains the main keyboard (similar to a typewriter keyboard), a row of function keys at the top, the editing keypad, and the auxiliary keypad.

menu

A list of available P/OS services or functions appearing on the Professional screen. You tell P/OS what to do by making a selection from a menu.

overtype mode

The way PROSE handles what you type in a file unless you use the INSERT HERE key. In overtype mode, PROSE deletes existing text if you type over it.

P/OS

The Professional's operating system. The operating system manages the computer.

PRO/Communications

A P/OS application that enables you to use your Professional to communicate with DIGITAL PDP-11 and VAX host computers. With the PRO/Communications, you can transfer files to and from the host and use your Professional as if it were a terminal on the host computer.

program

A sequence of instructions used by a computer to perform specific operations. A programmer writes a program in PRO/BASIC or some other programming language by first creating a program source file at the keyboard.

prompt

> A request displayed on the screen for you to type in certain information. On menus, a prompt appears on a line below the menu list.

PROSE

> The editor supplied with P/OS. See also editor.

protection

> The preventing of accidental deletion of your Professional 350 files. You can protect files with "Change file(s) protection" with write-protect tabs on your diskettes, with "Back up disk file(s)" and "Copy file(s)," and by keeping diskettes and the Professional 350 in a safe place.

scrolling

> The movement of lines of text up or down the monitor screen.

system unit

> The part of your Professional that contains the diskette drive, disk, option modules, power supply, and the computer itself. The system unit is the main component of the Professional.

word wrap

> With PROSE, the automatic dropping to the next line of any word you type that extends past the right margin of your text. You can set word wrap off or on.

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PRO/DataManager

INTRODUCTION

With PRO/DataManager you can manage your information using *forms* you design, arrange it in the order of your choice, and generate reports. The forms you design are similar to paper forms that you use to store important information. You can design new forms, add information to them, modify or correct existing information, or just look at specific information.

Using PRO/DataManager you can also design and generate *reports* on your screen or on a printer. It's easier than using pencil and paper, since PRO/DataManager relieves you of the drudgery of having to cut and paste, set up and rule columns, or rework the reports if your information needs to be changed.

PRO/DataManager lets you perform many useful operations with your information, using the forms you create. You can select information that matches any criteria you choose. For example, you can alphabetize, or sort your information, and then look at only the information you are interested in. You can tailor reports to summarize specific information from a form, or display all the information—it's up to you.

You can also use PRO/DataManager to work with information generated by *PRO/Graph* or *PRO/Spreadsheet*. For example, PRO/DataManager can read in financial data calculated by PRO/Spreadsheet that you want to include in a report. Or, PRO/DataManager can select data and store it in a file for later use by PRO/Graph.

The collection of information you want to work with is commonly known as a *data base*. When using PRO/DataManager, you access the information in the data base using a form that you create. The form is simply a screen representation of some or all of the information in the data base. For each data base, you design just one form for working with your information. You can easily modify the form to reflect your changing needs.

Each data base has one *data file* and one form associated with it. The data file consists of all the information in the data base, and the form is what you use to look at or make changes to the information.

A form consists of printed or typed text with blank spaces for inserting information. Each blank space on the form is called a *field*. On a filled-in form, the fields contain the specific items of information that you are interested in (for example, name, address, or date).

Each individual entry, consisting of text and filled-in fields, is called a *record* in the data file. Each record consists of all the information about an individual subject, for example, one employee's payroll check or one library card from the card catalog. All the records for a form constitute the form's data file.
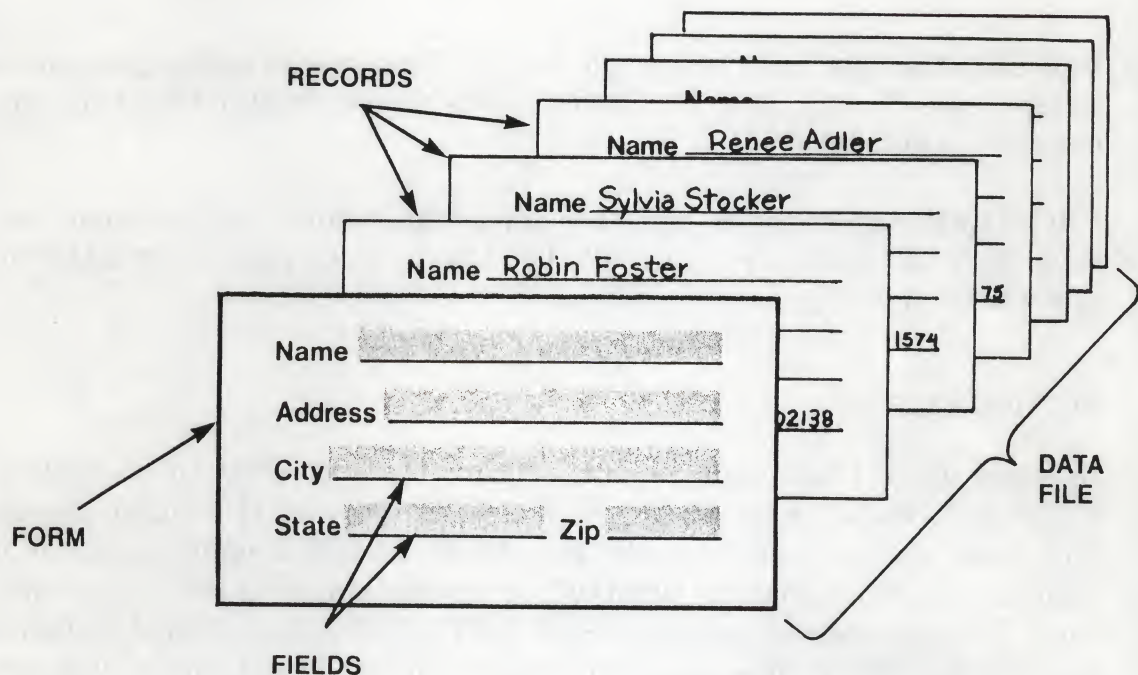
Figure 1
Typical Form

You store each form's data file on your hard disk or on diskettes. The number of data files (data bases) that you can store depends on the amount of free space on your hard disk and on the size of your diskettes.

BEFORE YOU BEGIN

Before you start using PRO/DataManager for the first time, take a few minutes to think about the different kinds of information you work with and what you need to be able to do with that information. PRO/DataManager can help you work more efficiently with any information that you currently keep on paper forms, such as personnel records, customer accounts, inventory, or subscription lists (to name but a few). All of these "data bases" have one thing in common— you need to be able to access, manipulate, and update them easily and quickly. You probably also need to be able to produce timely reports that summarize some or all of your information. Or, perhaps you need to be able to create form letters and mailing labels for mass mailings. PRO/DataManager can help you do all these things.
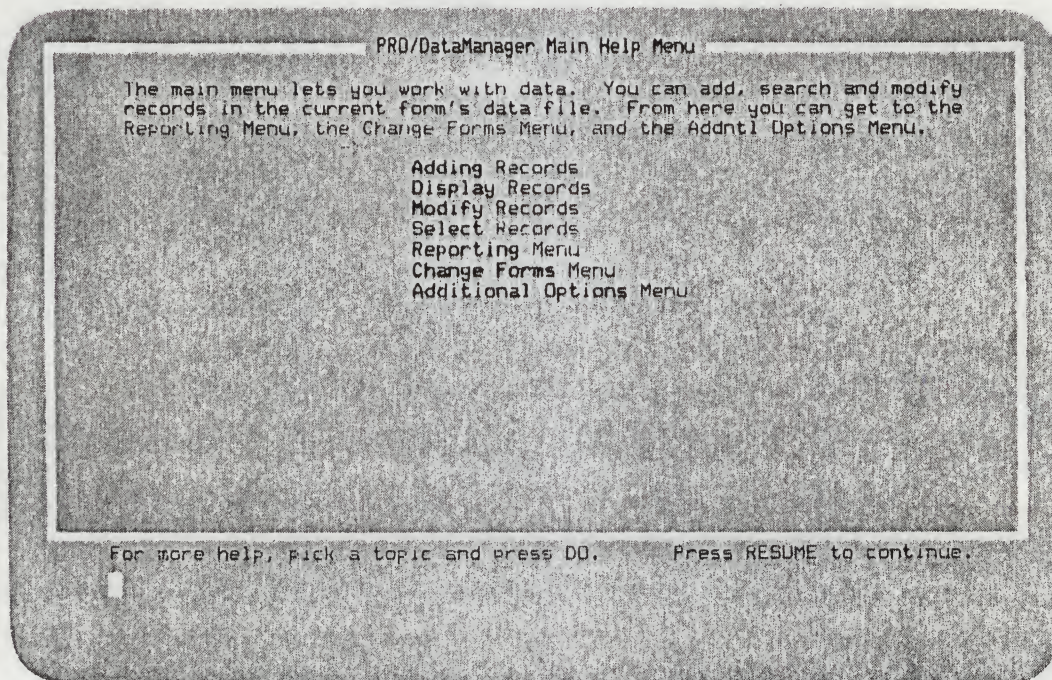
PRO/DataManager must be installed on the Professional before you can use it. Refer to the *Professional 300 Series User's Guide for Hard Disk System* for installation instructions.

PRO/DataManager guides you through all procedures using menus, so you never have to remember commands. The User's Guide explains in detail how to select from menus.

GETTING HELP

If, while using PRO/DataManager, you are not sure what to do next, press HELP. Information appears on the screen to aid you. If multiple screens of HELP are available, pressing HELP or NEXT SCREEN again shows you more information, while pressing RESUME at any time returns you to your original work. You can continue pressing HELP, NEXT SCREEN, or PREV SCREEN (to see previous HELP information) until a message tells you to press RESUME (to return to your original work), or until the PRO/DataManager Main Help Menu appears.

```
┌─────────────────── PRO/DataManager Main Help Menu ───────────────────┐
│                                                                       │
│   The main menu lets you work with data.  You can add, search and     │
│   modify records in the current form's data file.  From here you can  │
│   get to the Reporting Menu, the Change Forms Menu, and the Addntl    │
│   Options Menu.                                                        │
│                                                                       │
│                    Adding Records                                     │
│                    Display Records                                    │
│                    Modify Records                                     │
│                    Select Records                                     │
│                    Reporting Menu                                     │
│                    Change Forms Menu                                  │
│                    Additional Options Menu                            │
│                                                                       │
│                                                                       │
│                                                                       │
│   For more help, pick a topic and press DO.     Press RESUME to       │
│                                                 continue.             │
└───────────────────────────────────────────────────────────────────────┘
```

The type of help you get depends on what you are doing at the time. If you are looking at a menu, the help you get depends on that menu and where the pointer is on the menu when you press HELP. When you press RESUME, the HELP information disappears and your original work reappears.

CREATING YOUR FIRST FORM

Choose the PRO/DataManager application from the P/OS Main Menu by moving the pointer to "PRO/DataManager" with the ↓ key and press DO. If PRO/DataManager was installed on an additional applications menu, then choose it from that menu.

Introductory information will be displayed on your screen. After reading this information, press RESUME to start using PRO/DataManager. To get additional help, press HELP.

Next, the Name a File Form is displayed. PRO/DataManager requests the name of the *dictionary file* used to store the names of all the files associated with your forms. It is recommended that you put the dictionary file in USERFILES under the name FORMS.DIC. Do not change the file type of the dictionary file. Type a new file name (nine characters or less), or leave the one that is displayed, and press DO.

The Change Forms Menu—Additional Options is displayed. Choose "Create a New Form" and press DO. You can ignore the other choices on the menu for now—you'll learn about them later.

Create a New Form

You create a new form in order to enter and access the information in a data base. The form will consist of *background text* and fields. Background text is fixed information that you type into the form during the form creation process. The fields are fixed-size locations where you enter information. Although you don't have to include background text on the form, it makes it much easier for someone to enter data, if they can see what kind of information the fields on the form contain.

To create a new form, you:

□ Type in any background text and define the fields you want the form to have.

□ Modify text and/or fields (if you need to).

□ Choose a name for the data file that will be used to store your records.

□ Give the form a name.

The overall dimensions of the work area available for defining fields and typing background text are 18 lines down by 80 characters across. Each form can have up to 40 fields on it, but they must all fit on one screen. A form cannot be split over more than one screen display.

Typing Background Text and Defining Fields

Use the arrow keys to move the cursor to where you would like some background text to appear, and type the text. You can type background text at any time while you are defining fields on the form. If you decide to change the text at any time during the form creation process, simply delete the text using the ⊲X key and retype it.

Background text can be any length and can say whatever you like, but it is recommended that you use it to describe the kind of information that is being requested by this form or for a particular field. Background text can include any instructions concerning the specific type of information you are requesting, such as "Enter your full name, last name first."

Press **EXIT** to leave the form creation process at any time without creating a form. Doing so will return you to the Change Forms Menu—Additional Options. Press **CANCEL** at any time to clear your work and start again.

Defining a field consists of:

□ choosing a *data type*

□ specifying a *field width*

□ naming the field

Choosing a Data Type

Each field stores a specific type of information that characterizes the field. For example, each record for an income tax form consists of many fields, each one storing a specific type of information, such as number of deductions, dependents, interest income, or taxes withheld. The type of information the field contains is referred to as the "data type" of the field.

After typing some background text that describes the field, now press the arrow keys to move the cursor to where you want the field to appear. Press SELECT. Five data types are displayed on the status line near the bottom of your screen.

Pressing ← or →, highlight the data type you want to assign to this field. The five data types are:

- [ ] *Date*—for fields that contain dates, in the form mm/dd/yy. Date fields have a fixed, pre-assigned size of eight characters where mm is the month, dd is the day, and yy is the year.

- [ ] *Money*—for fields that contain money amounts (dollars and cents). Money fields must be at least 5 characters long.

- [ ] *Text*—for fields that contain letters or numbers or combinations of them (for example, names, addresses, telephone numbers, zip codes). Text fields can be 1—1005 characters long. A text field can be up to 18 lines long or up to 80 characters wide.

- [ ] *Integer*—for fields that contain whole numbers with no fractions (for example, age or quantity). Integer fields can be 1—10 digits long.

- [ ] *Decimal*—for fields that contain a number with a decimal point (such as fractions), up to 16 columns in length.

Press SELECT to select the data type you highlighted.

Specifying a Field Width

(Note that for fields of data type "date," you can skip this step. PRO/Data-Manager defines date fields automatically to be eight characters long.)

The "Width:" attribute in the status line is highlighted. The current width of the field is displayed for your reference.

Text fields can be any width/height combination, up to 18 lines down or 80 characters across. Press ← or → to adjust the width of the field. For text fields, you can also press ↑ and ↓ to adjust the height of the field. The "Width:" attribute displays the dimensions of the text field as the number of lines down by the number of characters across. Press SELECT when you are done.

Naming the Field

The "Name:" attribute in the status line is highlighted. Assigning a *field name* gives PRO/DataManager a useful way to remind you of each field. Later, if you choose "Information" from the PRO/DataManager Main Menu—Additional Options, the names of your fields are displayed, along with other important information about your fields. The field name has no relationship to any background text you may have typed for the field.

Type a unique field name of eight characters or less, and press SELECT.

Repeat the procedure described above to define all the fields that you want the form to have. To change, delete, or move one or more fields while you are creating the form, see "Modifying Your Form," below. When you are finished defining (or changing) fields, press DO. Then go to "Naming the Data File," below.

Here is an example of a form after background text has been typed and fields have been defined:

```
                        Creating a New Form

        Name
        Street
        Town

    Phone                    Current office held


            1982    1983    1984    1985
    Dues paid
Contributions

                                        1 = Spring 82 fund drive
                                        2 = Fall 82 fund drive
                            1 2 3 4 5   3 = Fall 82 rally
Participation in recent events _ _ _ _ _  4 = Spring 83 fund drive
    (O = organizer, W = worker)          6 = July 4 83 parade float


                                    Removed field buffer [        ]
Compose a new form.
Press DO when you are finished.     Press HELP for more information.
```

Modifying Your Form

PRO/DataManager lets you modify the background text and fields on a form, as you are creating it. Or, if you decide to modify the form later, you can press **ADDTNL OPTIONS** from the PRO/DataManager Main Menu and choose "Modify Form." (See the description of the PRO/DataManager Main Menu later in this chapter.)

To change (or just look at) the definition of any field on the form, move the cursor anywhere inside the field and press **SELECT**. If you decide not to change any of the attributes for that field, press **CANCEL**. When you have finished modifying the form, press **DO**.

Renaming a Field

To rename one or more fields on the current form, do the following:

1. Use the arrow keys to position the cursor anywhere inside the field and press **SELECT**.

2. Press ← or → to highlight the "Name:" attribute on the status line and press **SELECT**.

3. Type a new field name of eight characters or less, and press **DO**.

Increasing the Width of a Field

If you discover that a field is not long enough to hold all the information you want it to, you can increase that field's width, as follows:

(Note that fields of data type "date" have a fixed size of eight characters that you cannot change.)

1. Use the arrow keys to position the cursor anywhere inside the field and press SELECT.

2. Press ← or → to highlight the "Width:" attribute on the status line and press SELECT.

3. Press ↓ or ↓ and → (for multiline text fields) to position the cursor where you want the field to end, and press SELECT again.

Changing the "Required:" Attribute

The "Required:" attribute for a field designates whether or not you can bypass this field when filling in the form. If the "Required:" attribute is set to YES, this field must contain a non-zero value or must not be left empty. If the "Required:" attribute is set to NO, the field can have a zero value or can be left empty. When you create a field, it is initially designated as not required. To change the setting of the "Required:" attribute, do the following:

1. Use the arrow keys to position the cursor anywhere inside the field and press SELECT.

2. Press ← or → to highlight the "Required:" attribute on the status line and press SELECT.

```
                          Creating a New Form

       Name _____  _____
     Street _____
       Town _____, __
  Phone _____      Current office held _____

           1982    1983    1984    1985
  Dues paid   ____    ____    ____    ____
Contributions   ____    ____    ____    ____

                                    1 = Spring 82 fund drive
                                    2 = Fall 82 fund drive
                      1 2 3 4 5     3 = Fall 82 rally
Participation in recent events _ _ _ _ _   4 = Spring 83 fund drive
    (O = organizer, W = worker)      5 = July 4 83 parade float
       Name: phone        Width: 8       Type: text     Required: NO
                                       Removed field buffer [       ]
Compose a new form.
Press DO when you are finished.          Press HELP for more information.
```

The field will be automatically changed, depending on the initial setting, from
YES to NO or from NO to YES.

Moving a Field

If you decide that you want to rearrange any of the fields on your current form,
do the following:

1. Use the arrow keys to position the cursor anywhere inside a field you
    want to move and press **REMOVE**. The field name is displayed inside
    the "removed field buffer" at the bottom right of the screen. You can
    move only one field at a time, and this buffer displays the name of the
    field you are moving.

```
                            Creating a New Form

        Name _____
      Street _____
        Town _____,__ ▪

     Phone _____      Current office held _____


                1982    1983    1984    1985
     Dues paid  _____   _____   _____   _____
  Contributions _____   _____   _____   _____

                                              1 = Spring 82 fund drive
                                              2 = Fall 82 fund drive
                                   1 2 3 4 5  3 = Fall 82 rally
    Participation in recent events  _ _ _ _ _  4 = Spring 83 fund drive
       (O = organizer, W = worker)            5 = July 4 83 parade float


   Compose a new form.                     Removed field buffer [ZIPCODE ]
   Press DO when you are finished.
                                           Press HELP for more information.
```

2. Position the cursor at the new location for the field, and press INSERT HERE. The field is moved to the new location, and the "removed field buffer" is now empty.

Deleting a Field

If you decide that you do not need a field that is on the current form, you can delete it by doing the following:

1. Use the arrow keys to position the cursor anywhere inside the field you want to delete and press REMOVE.

    The field name will be displayed inside the "removed field buffer" until it is overwritten by the next removed field or until you leave the form.

Naming the Data File

When you have finished adding or modifying background text and fields, press DO. A menu is displayed that requests the name of the data file that will be used to store the records.

Type a unique file name, beginning with a letter, of up to nine characters (letters A-Z and/or 0-9 only) and press DO. If you make a typing mistake, use the ⊲⊠ key to make corrections.

The data file will be stored in your current directory on volume BIGVOLUME unless you choose a different directory or volume. To choose a different directory or volume, press ADDTNL OPTIONS. Do not change the file type of the data file.

Naming the Form

Next, PRO/DataManager asks you for the name of the form. Use a similar name for the form to what you specified for the data file. The name of the form will be listed on the Change Forms Menu (until you delete the form).

Type a unique name for the form (up to 20 characters) and press DO. The PRO/ DataManager Main Menu is displayed. Notice that the form you just created is your *current form*. The current form is the form with which you can work.

Congratulations! You have just created your first form. Now, whenever you enter PRO/DataManager, the first menu you see will be the Change Forms Menu, which lists all your forms. You then choose the form that you want to work with from that menu. The Change Forms Menu is described under "PRO/ DataManager Main Menu," below.

Notice that the data file has no records associated with it yet, because you haven't typed in the information you want to store in the data file. To add records to the data file using the form you just created, choose "Add records" from the PRO/DataManager Main Menu. After adding records, you can modify, select, or delete them by choosing these operations from the PRO/DataManager Main Menu.

PRO/DATAMANAGER MAIN MENU

The name of your current form appears at the top of the PRO/DataManager Main Menu, along with the total number of records stored in this form's data file.

If you have just created a new form, the number of records is zero, because you have not yet added any records. Choose "Add records" to add new records to the data file using the current form. After adding records, you can manipulate those records using "Select records," "Display records," "Modify records," or "Reporting" from the PRO/DataManager Main Menu. Or, choose "Change Forms" to work with a different form or create a new one. Press **ADDTNL OPTIONS** to back up, delete, modify or rename a form, to sort records or delete records, or to view information about the form.

```
                               PRO/DataManager
    Current Form:   PAC Roster              Number of records:    500
                         ->
                               Add records
                               Display records
                               Modify records
                               Select records
                               Reporting
                               Change Forms




                                            Additional Options available

        Make a selection and press DO;         Press HELP for more information.
```

Add Records

Choose "Add records" if you want to add new records to the data file using the current form. The new records will become your *current selection* of records. The records in the current selection are the ones with which you can work. Your data file can have as many records as you want, up to the limit of the space available on the disk.

To add records:

1. Choose "Add records" from the PRO/DataManager Main Menu and press DO. A blank form appears.

    The instruction "Add New Records" appears at the top of the screen, and the name of your form appears at the top right. At the top left is the heading "Records," which keeps track of the total number of records in this data file. If this is a new form, the total number of records in the data file is 0.

    At lower left is the "Selection size." This number is a running count of the total number of records added during the current "Add records" session.

    The "Selection index" (at lower right) is an index that helps you keep track of which record you are working with as you add new records and move between records. Each record has a sequential index number assigned to it, and when you press NEXT SCREEN or PREV SCREEN to review your records, the index indicates where you are, just like the page numbers in a book.

2. Type the requested information into each field on the form, starting with the first field (the one closest to the top left of the screen). Press RETURN to advance to the next field. Pressing RETURN always moves the cursor to the start of the next field to the right, or down the form.

    The information that you type into a field must be valid for that field. Each field on the form has been pre-defined with one of five data types. Only information which matches the data type of the field is valid. For fields of each data type, the kind of information you can type is as follows:

Data type:	What kind of information you can type:
date	Type dates in the form mm/dd/yy, where mm is the month, dd is the day, and yy is the year. The "dd" (day) is optional. Examples: 5/29/83 5/83

money	Type money amounts not exceeding $21,000,000.00. Include commas and/or a decimal point if you wish.
	
	Examples: 5.99
	         1,342.00
	         2

text	Type text consisting of letters or numbers or combinations of them (for example, names, addresses, telephone numbers, zip codes). As you type text in a multiline text field, the text automatically wraps around to the next line of the field.
	
	Examples: 12855 N.E. 11th Court (address)
	         James Farrington (name)
	         (617) 493-5097 (telephone number)
	         02138 (Zip Code)

integer	Type numbers that are not expressed as fractions, such as age or quantity. Type the "−" (negative sign) if the integer is negative. Examples: 28 −325

decimal	Type numbers that contain a decimal point, such as fractions. You can also type numbers in scientific notation using the letter E. The letter E means "times ten to the power of." The exponent must be a number between −38 and +38, that follows the letter E.
	
	Examples: .05301 or 5.301E-2
	         152.362 or 1.52362E2
	         1000.00 or 1E3

3. If a field contains the same (constant) information for all records in the data file, type the constant information into the field and then press function key **F19**. This key designates whether this field contains constant information or not. When you finish adding information to the current record and start adding the next record, only fields that you did not make constant will be blank. To turn off a constant field, press **F19** again when the cursor is positioned at that field. (Later, you can choose "Information" from the PRO/DataManager Main Menu—Additional Options to see which fields have been designated as constant.)

4. Continue typing the information required by each field until you have filled every field. If you make a typing mistake, use the ◁X key to make corrections.

5. To change information in a field you've already filled in, use the arrow keys, or press **RETURN** to move the cursor to the beginning of the field. Type the new information directly over the old information. (As soon as you type a character in the field, the old information is erased.)

   To move the cursor into a field without typing text (for example, to change one character inside the field but not the whole field), position the cursor at the beginning of the field and press **SELECT**. You can then move the cursor into the field by pressing ➡. Type the new information, using the ◁X key to make corrections.

6. To go to the next record press **NEXT SCREEN**. If there are any required fields, you must fill them in before going to the next/previous record or returning to the PRO/DataManager Main Menu. If you try to leave a record without filling in a required field, an error message is displayed and the required field is highlighted. Fill in the required field and then press **DO, NEXT SCREEN, PREV SCREEN,** or **RETURN** to continue.

7. Continue adding records, pressing **NEXT SCREEN** to move to the next record, or pressing **PREV SCREEN** to review or make corrections to the records you've just added. Any "constant" fields will already contain the information you typed when you designated the field as constant.

8. When you have finished adding records, press **DO** to return to the PRO/ DataManager Main Menu. The records you just added become your current selection of records. The current selection of records are the ones with which you can now work.

Display Records

Choose "Display records" to display the current selection of records in the current *tabular format*. A tabular format consists of information from your records formatted in the columns and rows of a table. The current tabular report format is the most recently created or used tabular format that was generated by PRO/DataManager's "Reporting" function.

You must have already created at least one tabular report format for the current form before you can choose "Display Records." To create a tabular report format or choose a different tabular format, choose "Reporting" from the PRO/DataManager Main Menu.

Press ↑ or ↓ to scroll through your records, or use **NEXT SCREEN** and **PREV SCREEN** to display one screen at a time.

Press **EXIT** to return to the PRO/DataManager Main Menu.

Modify Records

Choose "Modify records" if you want to look at the current selection of records individually and/or change the contents of any fields in your records. The records you see are those you just added or those chosen by the last "Select records" operation.

Choose "Modify records" from the PRO/DataManager Main Menu and press **DO**. The first of your current records is displayed. Use **NEXT SCREEN** and **PREV SCREEN** to review your records.

At lower left is the "Selection size." This number is the total number of records you are currently working with (the total number of records in the current selection.)

The "Selection index" (at lower right) is an index that helps you keep track of which record you are working with as you move between records. Each record has a sequential index number assigned to it, and when you press **NEXT SCREEN** or **PREV SCREEN** to review your records, the index indicates where you are, just like the page numbers in a book.

To change the contents of a field, move the cursor to the beginning of that field using the arrow keys or RETURN. Type the new information. As soon as you type the first character, the old information in the field is erased. Use the ⟨X⟩ key to correct mistakes.

To move the cursor into the field without typing text (for example, if you just want to change one character inside the field but not the whole field), position the cursor to the beginning of the field and press SELECT. You can then move the cursor into the field by pressing ➡. Type the new information, using the ⟨X⟩ key to make corrections.

Move the cursor to the next field you want to change or press NEXT SCREEN or PREV SCREEN to display the next or previous record.

Press DO when you are done to return to PRO/DataManager Main Menu. Your modified records become your current selection of records.

Select Records

Choose "Select records" if you want to work with all your records or just one or more specific ones. "Select records" locates the records you are interested in and makes them your current selection of records.

For example, if you want to make a change to just one record, you can use "Select records" to have PRO/DataManager locate only that record. Then you don't have to search through all your records just to find the specific one you want to change. You would then choose "Modify records" from the PRO/Data-Manager Main Menu to make changes to the record.

You will be asked to provide the selection criteria PRO/DataManager will use to search for the records you want to find.

To select one or more records from your current form:

1. Choose "Select records" from the PRO/DataManager Main Menu and press **DO**.

2. A blank copy of your current form is displayed. Press **EXIT** at any time to end the "Select records" operation and return to the PRO/DataManager Main Menu.

   Press **DO** to select all the records in the current form and return to the PRO/DataManager Main Menu.

   At lower left is the "Selection size." This number is the total number of records you are currently working with (the total number of records in the current selection.)

   Before making a new selection, you must first decide which field(s) on the form contain the information you are interested in. You can use as few as one, or as many as all your fields for the selection.

3. To select a field, use the arrow keys to move the cursor to that field and press **SELECT**. Press **REMOVE** to delete the field, if you decide not to select it. The name of the field you selected is displayed at the bottom of the screen. Press ← or → to highlight the selection condition you want to use and press **SELECT**. Each condition specifies a different way of comparing the information in this field with the information you want to find. The conditions are defined as follows:

   ☐ < = means "less than or equal to" (for numbers) or "up to and including" (for text)

   ☐ < means "less than" (for numbers) or "up to" (for text)

   ☐ = means "equal to" (for numbers) or "same as" (for text)

   ☐ < > means "not equal to" (for numbers) or "different from" (for text)

   ☐ > means "greater than" (for numbers) or "after" (for text)

   ☐ > = means "greater than or equal to" (for numbers) or "after and including" (for text)

   PRO/DataManager displays the selected condition at the bottom of the screen next to the selected field, and highlights that field on the form.

4. Type the selection criteria for this field. PRO/DataManager compares your criteria against the information in each record and picks out the records that match your criteria. You can type specific alphanumeric characters, or you can generalize the selection by typing ellipses (...) before or after the characters.

   For example, to select all fields containing only the text "Smith", type Smith. To select instead all fields that begin with the text "Smith", type Smith ... Alternatively, to select all fields that include the phrase "Smith", type ... Smith. Use the ⬐X⟩ key to correct any typing mistakes. When you are done, press SELECT.

5. To select another field, press ← or → to highlight "AND" or "OR" and press SELECT. Then repeat Steps 3-5.

   You can use up to 10 "OR" clauses. Each "AND" clause cannot be more than 70 characters long. If your selection criteria consists of both "AND" and "OR" clauses, PRO/DataManager evaluates the "AND" clause first, and then compares that result with the "OR" clause.

   When you are done, press DO or press ← or → to highlight "DONE" and press SELECT to return to the PRO/DataManager Main Menu.

PRO/DataManager searches for all the records that match your selection criteria, returns you to its Main Menu, and displays a message telling you how many matching records were found.

The records you just selected become your current selection of records. To see the selected records, choose "Display records" or "Modify records." When you want to return to working with all your records, choose "Select records" and press DO to select all your records.

Reporting

Choose "Reporting" to print, modify, delete, or change the current *report format,* or to set up how a report will be printed.

If the current form does not have a current report format, you must first create one. The Change Current Report Format Menu—Additional Options is automatically displayed, so that you can create a report format. See "Creating Your First Report Format," below.

If the current form has a current report format, the Reporting Menu is displayed. See "The Reporting Menu," below.

Creating Your First Report Format

When you create a new form with its associated data file, the form does not have a current report format. The report format defines how the information in your data file will look when it is displayed or printed. Each data file can have up to 20 different report formats that you create.

Choose "Reporting" and press DO. The Change Current Report Format Menu—Additional Options is displayed.


```
          Change Current Report Format - Additional Options
              Which type of format do you want to create?
                 ->
                        Tabular Format
                        Free Format




  Make a selection and press DO;        Press HELP for more information.
```

Next, choose the report format you want to create and press DO.

Tabular format

A *tabular format* consists of one or more columns with headings. Each column contains information from one field on the current form. Tabular format reports can be displayed on the screen using "Display records" from the PRO/Data-Manager Main Menu. They can be printed using "Print Report" from the Reporting Menu.

Name		Street	Town	Phone
Paula	Aberman	271 Davis Rd	Dtown	508-3181
Lucy	Adams	499 Second Rd	Btown	407-1731
Dave	Adams	381 Woodland St	Etown	502-8898
Pam	Adamson	247 Vernon Dr	Dtown	508-7181
Joe	Adler	395 Stone St	Btown	407-3313
Russ	Agnelli	208 Water Av	Btown	407-7790
Tom	Agnitti	139 Lakeside Rd	Btown	407-9435
Annette	Agnitti	208 Electric Dr	Ctown	404-9440
Joanne	Aho	184 Third Dr	Dtown	508-7755
Ray	Aho	2 Willow St	Btown	407-2634
Jeff	Aho	78 Lakeshore Dr	Gtown	505-7090
Howard	Alexander	245 Day Av	Ctown	404-5734
Yvonne	Alie	68 Shaker Av	Dtown	508-0047
Paula	Anderholm	283 Little Rd	Atown	507-7165
Ron	Arsenault	308 Mechanic St	Btown	407-2001
Tim	Arsenault	61 Princeton Rd	Btown	407-8982
Rob	Artist	411 White Av	Etown	502-7291
Mark	Arute	78 Great St	Atown	507-4396
Phil	Ashe	333 Bulkley Rd	Btown	407-6783

Free format

A *free format* consists of optional background text with one or more embedded fields selected from the current form. Free format reports can include form letters and mailing labels. In a form letter, for example, the "background text" is the body of the letter and the "embedded fields" are the "name" and "address" fields selected from the current form. Free format reports can be printed using "Print Report" from the Reporting Menu. When the report is printed, the value of each field is copied to the report and then printed.

```
                                        PAC Headquarters
                                        459 Lake Street
                                        Dtown, MA 01234


Dear  ____,


The Political Action Committee wishes to thank you for your
generous contribution in 1983 of $ ___.  Your contribution
will help continue to make events like the July 4 Parade
Float possible.

The Committee also wishes to acknowledge your fund raising
efforts in 1983, which brought in a total of $ ___.  We hope
we can continue to count on your vital support when the fall
fund raising drive begins next month.


Sincerely,


Sandy McDonald
Committee Chairperson
```

Creating a Tabular Format

Choose "Tabular Format" and press **DO**. Your current form is displayed. Move the cursor to a field that contains information you want to include in the report and press **SELECT**. Press ↑ or ← to reduce the size of the field, if you want. Reducing the size of each field will allow you to fit more fields on the report, but if you reduce the field size too much, you may lose information that is needed when you display or print the report.

Once you have adjusted the size of the field, press **SELECT** to choose that field for the report. The name of each selected field is displayed at the bottom of the screen, in left to right order, as it will appear in the report. If you change your mind about the field you just selected , press **REMOVE**. You can only remove the field you last selected.

The "Total display width" gives you the sum of all field widths selected so far, in columns. Every time you select a field, its width is added to the total display width. If you remove a field, its width is subtracted from the total. Because the screen display can be either in 80 column mode or 132 column mode (as specified using the SET-UP function key), the total display width helps you determine when the display will exceed 80 or 132 columns.

The "Current field width" tells you how many characters are in the current field or the last selected field. You may want to reduce the size of a field for display purposes. When you reduce the size of a field, this number tells you how many characters remain in the field.

Press DO when you are done selecting fields for the report.

The tabular report format is displayed and you can type in the table headings as you want them to appear for each column of the report. You can use up to four lines of text for each heading; unused lines will not appear in the final report. Use the ⟨X⟩ key to correct typing mistakes. Press DO when you are done or press EXIT to leave the headings unchanged.

Next, PRO/DataManager asks you for the name of the tabular report format. This will be the name of the format as it appears on the Change Current Report Format Menu. Type a unique name of up to 18 characters and press DO.

The Reporting Menu is displayed. The report format you just created becomes your current format. The format type (T for tabular) is also listed. To set up the way the report will be printed, choose "Set-up Printer." To print the report, choose "Print Report."

Creating a Free Format

Choose "Free Format" and press DO. Read the explanatory text on the screen and press RESUME when you are ready.

When you press RESUME, PRO/DataManager automatically enters the PROSE text editor, and you can begin typing the background text (if any) and selecting fields for your report. When you want to insert a field, position the cursor where you want the field to appear and press SELECT.
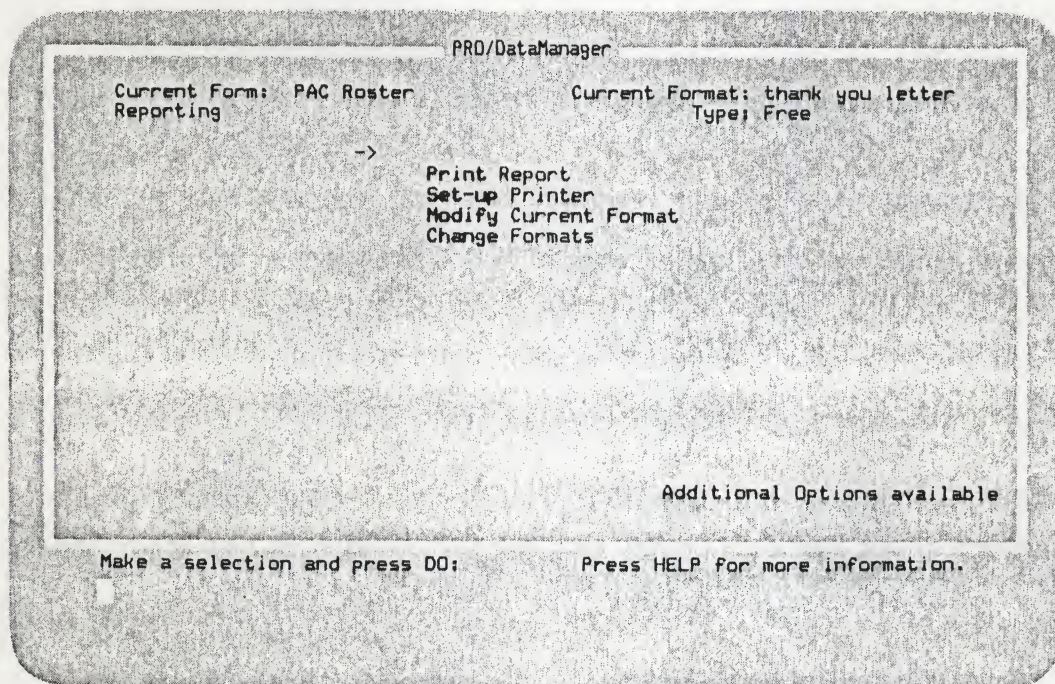
The current form is displayed. Move the cursor to the desired field and press SELECT.

Your report format is redisplayed with the selected field positioned at the cursor location. The field is identified by a blinking character, followed by underscores. For editing purposes, you can treat the field like text. For example, if you change your mind and want to delete the field from the format, simply type text directly over it, or use the ◁X key to delete it. You can also use the ◁X key to reduce the size of the field (for example, if it's a multiline text field and you only want to use the first line of information contained in the field).

Continue typing text using PROSE, pressing **SELECT** wherever you want a field to appear. When you are done, press **EXIT**. Make a choice from the Editor Exit Menu and press **DO**. Type a name for the new report format consisting of 18 characters or less and press **DO** to return to the Reporting Menu. The free format you just created becomes the current report format. The format type (F for free) is also listed. To set up the way the report will be printed, choose "Set-up Printer." To print the report, choose "Print Report."

The Reporting Menu

The Reporting Menu displays the name of the current form, the name of the current report format, and the format type (Tabular or Free).

```
                         PRO/DataManager
    Current Form:  PAC Roster         Current Format: thank you letter
    Reporting                              Type: Free

           ->
                    Print Report
                    Set-up Printer
                    Modify Current Format
                    Change Formats




                                    Additional Options available

    Make a selection and press DO:     Press HELP for more information.
```

You can print or modify the current report format, set up the printer before printing a report, or change the format you want to work with. Or, press ADDTNL OPTIONS to copy the current tabular report format to a table file, file the report, delete the report format, or rename report formats.

Print Report

To print reports, you must have an LA50, LA100, or LQP02 printer attached to your Professional.

Before printing your report, you may want to customize it by adding headers or footers, page numbers, or other formatting features. Choose "Set-up Printer" to customize your report before you print it.

Choose "Print Report" and press DO. Your report is printed using the current report format and the current selection of records. PRO/DataManager first copies the value of each field, in all the selected records, to the report, and then prints it. Make sure that your printer is ready, the power is on, and the paper is adjusted to the top-of-form. After the report is printed, the Reporting Menu is redisplayed.

Set-up Printer

Choose "Set-up Printer" to customize a tabular or free report format before printing the report. You can choose various options such as:

- ☐ Type a header and/or footer and specify the pitch (size) of the header and footer text

- ☐ Number the pages of your report

- ☐ Frame your report in a box, with lines separating each column

- ☐ Choose the left, right, top, and bottom margins within which your report will be printed; specify paper height and width

- ☐ Specify the spacing and pitch (size) of printed text

Choose "Set-up Printer" and press DO. The Printer Set-up Menu consists of multiple screens. To move between the screens of the menu, press NEXT SCREEN or PREV SCREEN.

The printer set-up options you see depend on whether the current report format is a tabular format or a free format.

Tabular Format Set-up Options

Screen 1 of the Printer Set-up Menu looks like this:

```
                 Tabular Report Printer Setup Parameters
    Header
           Justification (L=Left,C=Center,R=Right,O=Outside): C
           Pitch ( 5, 6, 8.25, 10(Pica), 12(Elite), 16.5 ):   10


           Framing (Y,N): Y


           Page Numbering (H=Header,F=Footer,N=None): N

    Footer
           Justification (L=Left,C=Center,R=Right,O=Outside): C
           Pitch ( 5, 6, 8.25, 10(Pica), 12(Elite), 16.5 ):   10



    Modify the printer setup parameters to change how your printed report looks.
    Use NEXT and PREV SCREEN keys to see other parameters.
    Press DO when you are done.                    Press HELP for more information.
```

Use the arrow keys to move the cursor to each set-up option on the menu.

Header

If you want your report to include a header, type it on the blank line. The header is an optional line of text of up to 60 characters; it will appear at the top of each page of your printed report. If you want page numbers in the header, include "Page 1" or "1" in the header and then specify H for header page numbering (see below). PRO/DataManager assumes that the right-most group of digits is the page number. On your printed report, page numbers will be automatically incremented.

Justification

Type the letter that corresponds to the text justification you want for the header: left justified (L), right justified (R), centered (C), or outside (O). "Outside" means that the header text will be right-justified on odd-numbered (right hand) pages and left justified on even-numbered (left hand) pages. If you do not type in any letter, text will be centered.

Pitch

Choose the pitch (character size) you want for the header. The higher the number of the pitch, the smaller the characters. Choose one of the six pitches; text is printed in 10 pitch (Pica) if you don't choose a different pitch. If the header text does not fit on the page (because the number of the pitch you chose is too low), PRO/DataManager automatically adjusts the size of the characters (increases the number of the pitch) to make them fit.

For each pitch, the text will look like this:

Pitch	Text
5	This text is pitch 5
6	This text is pitch 6
8.25	This text is pitch 8.25
10 (pica)	This text is pitch 10
12 (elite)	This text is pitch 12
16.5	This text is pitch 16.5

Framing

Framing specifies whether you want to frame each page of your report in a box, with lines separating each column. Choose N (no framing) to omit framing; choose Y (yes) to include framing.

Page Numbering

Page numbering is done automatically for you in either the header or the footer; N specifies no page numbering. If you specify either header or footer page numbering, be sure to include the initial page number in your header or footer.

Footer

If you want your report to include a footer, type it on the blank line. The footer is an optional line of text (up to 60 characters); it will appear at the bottom of each page of your printed report. If you want page numbers in the footer, include "Page 1" or "1" in the footer and then specify F for footer page numbering. PRO/DataManager assumes that the right-most group of digits is the page number. On your printed report, page numbers will be automatically incremented.

Justification, Pitch

Read the explanations of these features in the "Header" section, above.

Press **NEXT SCREEN** to go to the next screen of printer set-up options, or press **DO** instead to return to the Reporting Menu. Screen 2 of the Printer Set-up Menu looks like this:

```
                  Tabular Report Printer Setup Parameters
+------------------------------Paper Width ____8" ----------------------------->
|                              Top Margin ____1"
|                  +----------------------+-----------+
|                  |        Name          | Phone #   |
|                  +----------------------+-----------+
|                  | Jones                | 578-6789  |
| Paper    Left    | Smith                | 123-4567  |        Right
| Height   Margin  |    .                 |     .     |        Margin
| __11"    __0"    |    .                 |     .     |        __0"
|                  |    .                 |     .     |
|                  |                      |           |
|                  +----------------------+-----------+
|                        Bottom Margin ____1"
v

   Modify the printer setup parameters to change how your printed report looks.
   Use NEXT and PREV SCREEN keys to see other parameters.
   Press DO when you are done.                 Press HELP for more information.
```

Paper Width, Paper Height

Type the width and height (in inches) of the paper being used in the printer. Specify the actual width of the paper that the printer can reach. For example, for an LA50 printer, the maximum paper width that the printer can cover is 8 inches. For an LA100 printer, the maximum width is 13⅜ inches. For an LQP02 printer, the maximum width is 10½ inches.

Top Margin, Bottom Margin, Left Margin, Right Margin

Type the top, bottom, left, and right margins for each page of your printed report. The margins are measured in inches from the nearest edge of the paper. These margins will define the actual boundaries of the printed report. By adjusting the margins, you can cause the report to appear anywhere on the page. The report will be centered between the left and right margins.

Press NEXT SCREEN to go to the next screen of printer set-up options, or press DO instead to return to the Reporting Menu. Screen 3 of the Printer Set-up Menu looks like this:

```
                Tabular Report Printer Setup Parameters

 Lines/Inch (2,3(Double),4,6(Single),8,12):   6

 Pitch (5,6,8.25,10(Pica),12(Elite),16.5):    0
     NOTE - This is a default value.  If the table you are trying
            to print doesn't fit on the page it will be increased
            automatically.




 Modify the printer setup parameters to change how your printed report looks.
 Use NEXT and PREV SCREEN keys to see other parameters.
 Press DO when you are done.                Press HELP for more information.
```

Lines/Inch

Choose the number of lines/inch for your text. Single-spaced text is 6 lines/inch; double-spaced text is 3 lines/inch.

Pitch

Choose the pitch for your report text. Pica (10 pitch) and Elite (12 pitch) are two standard pitches. The pitch you choose will be used if the paper is wide enough and you have allowed enough space between margins. Otherwise, the pitch is automatically increased (the character size is made smaller) to make the report fit on the page.

Press **PREV SCREEN** to review the previous screens of the Printer Set-up Menu or press **DO** when you are done.

If PRO/DataManager finds that you haven't left room for the display within your chosen margins, a message appears on the screen and you are returned to the appropriate screen of the Printer Set-up Menu so you can revise them. If all your options are valid, PRO/DataManager returns you to the Reporting Menu. To print the report, choose "Print Report."

The following sample page shows a printed tabular format report.

Top Margin = 1"

Header (Justification is centered; pitch = 6)

PAC OFFICERS 1983-84

F I R S T	L A S T	O F F I C E
Pat	Delaney	Organizer
Ed	Dwyer	Organizer
Mildred	Enright	Membership
George	Fitch	Organizer
Agnes	Gibbons	Organizer
Mike	Giblin	Organizer
Linda	Gold	Organizer
Ellen	Halibut	Regional Liaison
Sam	Hannigan	Organizer
Daryl	Hollis	Organizer
Pete	Icabone	Program
Jessica	Lafleur	Organizer
Shawn	Levitz	Organizer
Tim	Lorden	Organizer
Sandy	McDonald	Chairperson
Sandy	Osmond	Treasurer
Cindi	Phelps	Organizer
Martha	Plant	Organizer
Dan	Salomaki	Organizer
Mary	VanOrden	Organizer

Text in Table = 4 Lines/Inch Pitch = 10 (Pica)

Right Margin = 1"

Left Margin = 1"

PAC Headquarters, 459 Lake St., Dtown, MA 01234   Page 1

Page Numbering Specified in Footer

Bottom Margin = 3"

Footer (Justification is centered; pitch = 16.5)

PAC OFFICERS 1983-84

F I R S T	L A S T	O F F I C E
Ron	Winslow	Organizer
John	Zimmerman	Alt. Chairperson

PAC Headquarters, 459 Lake St., Dtown, MA 01234   Page 2

**Page Number
Automatically
Incremented**

Free Format Set-up Options

Screen 1 of the Printer Set-up Menu looks like this:

```
                    Free Format Report Printer Setup Parameters
+----------------------------------Paper Width [    8" ------------------------->
|                                   Top Margin ____1"
|                  +---------------------------------------------------------+
|                  | Dear _____,                                       |
|                  |                                                         |
|                  |      Thank you for your order of ____ thingamajigs.     |
| Paper      Left  | Your order will be shipped on _____.  You can        |
| Height    Margin | request that we ship by express mail if this is         |
| __11"     __1"   | not convenient.                                         |
|                  |                                      Thanks,            |
|                  |                                   The Bank of Zork       |
|                  +---------------------------------------------------------+
|
|                            Bottom Margin ____1"
v

 Modify the printer setup parameters to suit your needs.
 Press NEXT and PREV SCREEN keys to modify all parameters.
 Press DO when you are done.               Press HELP for more information.
```

Paper Width, Paper Height

Type the width and height (in inches) of the paper being used in the printer. Specify the actual width of the paper that the printer can reach. For example, for an LA50 printer, the maximum paper width that the printer can cover is 8 inches. For an LA100 printer, the maximum width is 13⅜ inches. For an LQP02 printer, the maximum width is 10½ inches.

Top Margin, Bottom Margin, Left Margin

Type the top, bottom, and left margins for each page of your printed report. The margins are measured in inches from the nearest edge of the paper. These margins will define the actual boundaries of the printed report. By adjusting the margins, you can cause the report to appear anywhere on the page.

Press **NEXT SCREEN** to go to the next screen of printer set-up options, or press **DO** instead to return to the Reporting Menu. Screen 2 of the Printer Set-up Menu looks like this:

```
           Free Format Report Printer Setup Parameters
Lines/Inch (2,3(Double),4,6(Single),8,12):  _6

Pitch (5,6,8.25,10(Pica),12(Elite),16.5):  _10




Modify the printer setup parameters to suit your needs.
Press NEXT and PREV SCREEN keys to modify all parameters.
Press DO when you are done.              Press HELP for more information.
```

Lines/Inch

Choose the number of lines/inch for your text. Single-spaced text is 6 lines/inch; double-spaced text is 3 lines/inch.

Pitch

Choose the pitch for your report text. Pica (10 pitch) and Elite (12 pitch) are two standard pitches. The pitch you choose will be used if the paper is wide enough and you have allowed enough space between margins. Otherwise, the pitch is automatically increased to make the report fit on the page.

Press **PREV SCREEN** to review the previous screen of the Printer Set-up Menu, or press **DO** when you have finished to return to the Reporting Menu. To print the report, choose "Print Report."

Here is a sample page from a printed free format report:

**Information from Ann's
record inserted
automatically**

PAC Headquarters
459 Lake Street
Dtown, MA 01234

Dear (Ann) ,

The Political Action Committee wishes to thank you for your
generous contribution in 1983 of $ (20). Your contribution
will help continue to make events like the July 4 Parade
Float possible.

The Committee also wishes to acknowledge your fund raising
efforts in 1983, which brought in a total of $ (205). We hope
we can continue to count on your vital support when the fall
fund raising drive begins next month.

Sincerely,

Maureen Sullivan
Committee Chairperson

Body of letter = 4 lines/inch
Pitch = 12 (Elite)

Modify Current Format

Choose "Modify Current Format" to modify (edit) the current report format. If the current report is in tabular format, the tabular format is displayed so you can edit the column headings as you want them to appear on the printed report. Press DO when you have finished editing or press EXIT to leave the headings unchanged. You are returned to the Reporting Menu with the modified report format as your current format.

If the current report is in free format, you automatically enter PROSE so you can edit text and fields as you want them to appear on the printed report. You can delete fields, add new ones, or change the size of fields, just as you could when you created the report format. To delete a field, simply type text over it or use the ◁X key.

Press EXIT when you are finished editing with PROSE. The Editor Exit Menu is displayed. Make a choice and press DO. You are returned to the Reporting Menu with the modified report format as your current format.

Change Formats

Choose "Change Formats" to display a list of all your tabular (T) and free (F) formats.

```
┌─────────────────── Change Current Report Format ───────────────────┐
│                                                                     │
│  This is a list of your report formats.  Choose one and press DO.   │
│  If you wish to create a new format, press the additional options key. │
│                                                                     │
│                      Name,address,phone  T                          │
│                      thank you letter     F                         │
│                      officers             T                         │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                          Additional Options available │
└─────────────────────────────────────────────────────────────────────┘
   Make a selection and press DO:        Press HELP for more information.

   █                                        Select up to    1 items
                                                 (   0   chosen )
```
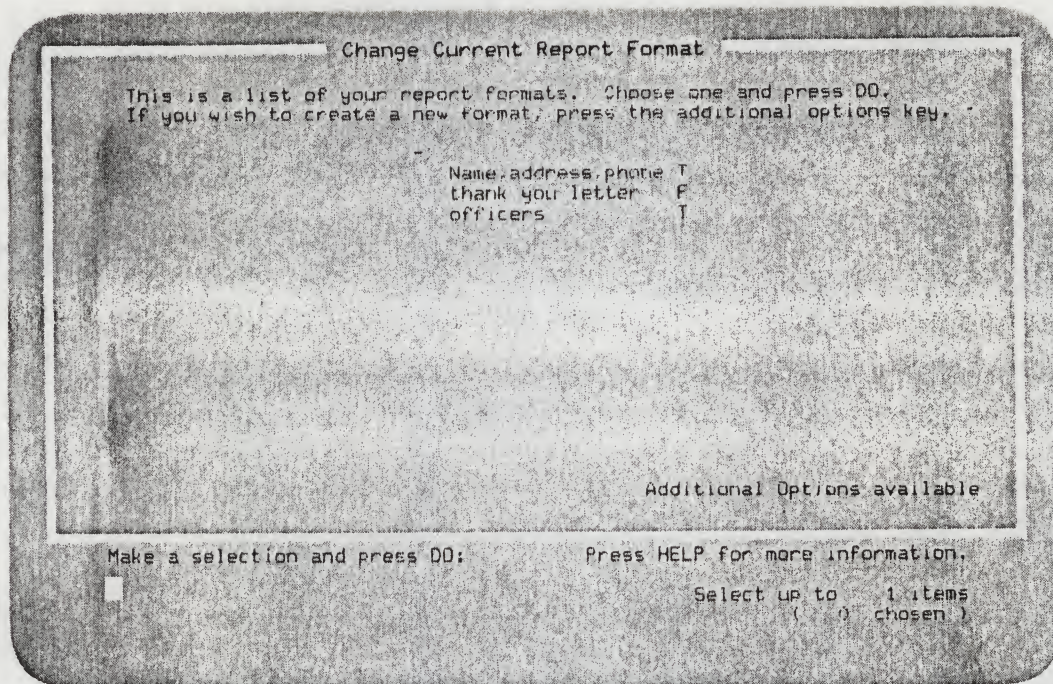
Choose the format that you want for your current format, and press DO. You are returned to the Reporting Menu, with the format you just chose as your current format.

When you create a new form, you must define at least one report format for it before you can display or print reports. Press ADDTNL OPTIONS to create a report format. Each form can have up to 20 report formats associated with it.

Additional Options

If you want to create a new tabular or free format, press ADDTNL OPTIONS from the Change Formats Menu. The following additional options appear:

☐ Tabular format

☐ Free format

Choose the format that you want to create and press DO or press EXIT to return to the Change Formats Menu without choosing an option.

Tabular Format

For a description of this option, see "Creating a Tabular Report Format," earlier in this book.

Free Format

For a description of this option, see "Creating a Free Report Format," earlier in this book.

Reporting Menu—Additional Options

Pressing ADDTNL OPTIONS from the Reporting Menu displays the following list of additional options:

- ☐ Copy Tabular Report to Table File
- ☐ File Report
- ☐ Delete Current Format
- ☐ Rename Formats

Choose an option and press DO, or press EXIT to return to the Reporting Menu.

Copy Tabular Report to Table File

This option lets you copy the current tabular report to a *table file* that PRO/DataManager will create from the report. A table file is a compatible file containing information that can be passed between PRO/DataManager and PRO/Graph, allowing them to share information. The table file should contain information from PRO/DataManager that you want to manipulate using PRO/Graph.

The current tabular format (or the most recently used tabular format) and the current selection of records will be copied to the table file. The table file will consist of information stored in columns and rows to form a table. The entire width of each field from the current report will appear as one column in the table. Each record from the current selection will appear as one row in the table.

Choose "Copy Tabular Report to Table File" and press DO. Type the name you want to assign to the table file and press DO. PRO/DataManager creates the table file (with file type .TAB) in your current directory unless you specify a different directory. You are then returned to the PRO/DataManager Main Menu.

File Report

If you choose this option, you must specify the name of a file in which the report will be filed (saved). Type a file name of up to 9 characters, or press ADDTNL OPTIONS to change the volume and/or directory for the file. All reports have the file type ".RPT," which you should not change. It is a good idea to file all important reports, so that you can print additional copies later on if you need them, using P/OS print services.

Delete Current Format

If you want to delete the current tabular or free report format, choose "Delete Current Format," and press DO. A warning prompt is displayed, and you must type "yes" and press DO to confirm your choice. Or, type "no" and press DO or press EXIT to preserve the format and return to the Reporting Menu. If you delete the current report format, you must choose another format or create a new format (using "Change Formats") before choosing any operations from the Reporting Menu.

Rename Formats

To rename one or more of the report formats for the current form, choose "Rename Formats," and press DO. Type the new name directly over the old name and press NEXT SCREEN or PREV SCREEN to change another name or just review the names. When you are finished, press DO to return to the Reporting Menu.

Change Forms

Choose "Change Forms" to display the Change Forms Menu, which lists all the forms you have created. Once you have created at least one form, the Change Forms Menu will be the first menu you see when you enter PRO/DataManager.

```
┌─────────────────────────── Change Forms ───────────────────────────┐
│                                                                     │
│   PRO/DataManager Version 1.0 Copyright © 1983 Digital Equipment Corp.│
│   This is a list of your forms.                                     │
│   Press ADDTNL OPTIONS to create or retrieve a form.               │
│                                                                     │
│                     Membership records                             │
│                     Mailing list                                    │
│                     PAC Roster                                      │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                                                     │
│                                              Additional Options available│
│                                                                     │
├─────────────────────────────────────────────────────────────────────┤
│  Choose a form and press DO:            Press HELP for more information.│
│                                                                     │
│                                              Select up to    1 items│
│                                                   (   0   chosen )   │
└─────────────────────────────────────────────────────────────────────┘
```

Choose a form from the Change Forms Menu and press **DO** to make it your current form and to redisplay the PRO/DataManager Main Menu. Or, press **ADDTNL OPTIONS** to create a new form, retrieve an old form, or read a table file.

```
┌──────────── Change Forms - Additional Options ────────────┐
│                                                           │
│  PRO/DataManager Version 1.0 Copyright © 1983 Digital Equipment Corp.  │
│  What do you want to do?                                  │
│                                                           │
│                    Create a New Form                      │
│                    Retrieve an Old Form                   │
│                    Read a Table File                      │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│  Make a selection and press DO:      Press HELP for more information.  │
└───────────────────────────────────────────────────────────┘
```
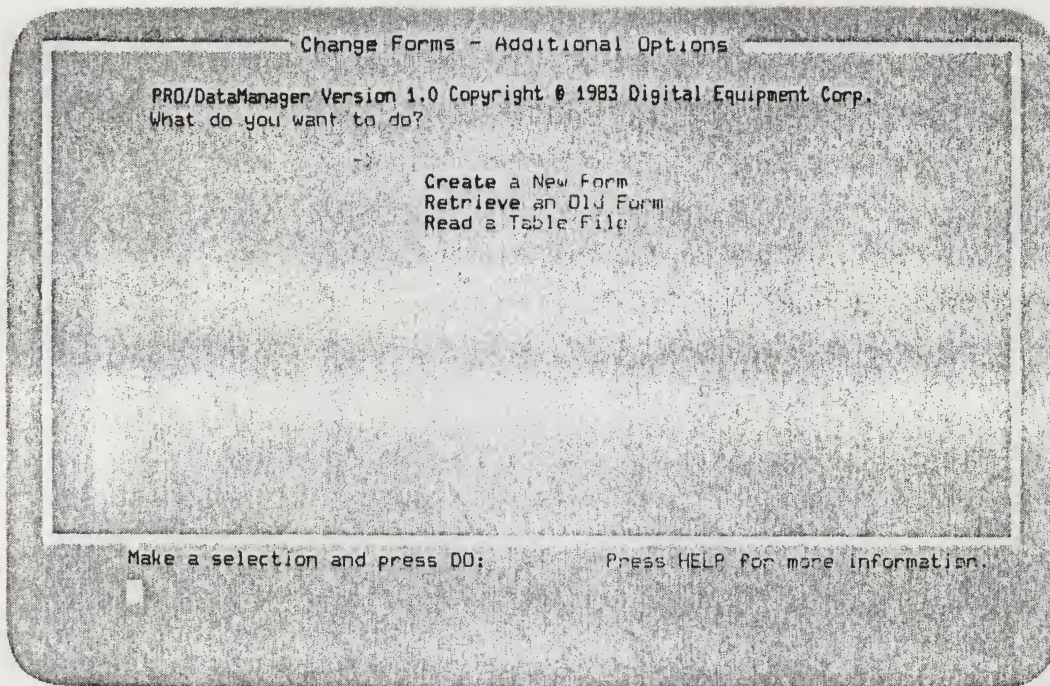
Additional Options

If you want to create a new form, retrieve a form that was
previously backed up, or read a table file, press ADDTNL
OPTIONS. The following additional options appear:

☐ Create a New Form

☐ Retrieve an Old Form

☐ Read a Table File

Choose an option and press DO or press EXIT to return to the
Change Forms Menu without choosing an option.

Create a New Form

For a description of this option, see "Create a New Form"
earlier in this book.

Retrieve an Old Form

If you choose "Retrieve an Old Form," a form will be copied to the hard disk at the location you specify. Retrieving a form allows you to recover a form you had previously backed up on a diskette and then deleted from the hard disk.

You can also choose "Retrieve an Old Form" to copy a form from one directory to another on the hard disk.

If you are retrieving a form from a diskette, insert the diskette containing the form to be retrieved into an available diskette drive.

Choose "Retrieve an Old Form" and press DO. A file selection menu is displayed. Move the pointer to the data file associated with the form you want to retrieve and press DO. Or press ADDTNL OPTIONS to get the file from a different directory/ volume or display the next group of files.

You can leave the file name unchanged, or type a new file name of up to nine characters and press DO. To copy the form to another directory on your hard disk, press ADDTNL OPTIONS and choose a different directory.

You are then returned to the PRO/DataManager Main Menu with the retrieved form as your current form.

Read a Table File

This option instructs PRO/DataManager to read a table file (file type .TAB) that was previously created by PRO/Graph or PRO/Spreadsheet. A table file is a compatible file containing information that can be passed between applications, allowing them to share information. The table file consists of information stored in columns and rows. When PRO/DataManager reads a table file, it creates a form to hold the information in the table file. This form will become your current form, and you can then use PRO/DataManager to manipulate the information.

Choose "Read a Table File" and press DO. A file selection menu is displayed, and you can choose the table file (file type .TAB) that you want PRO/DataManager to read. Make a choice and press DO.

Specify the name of the data file that will be created from the table file, and press DO. The table file is copied to the specified data file.

Type a name for the form that PRO/DataManager will create from the table file and press DO.

You are returned to the PRO/DataManager Main Menu with the new form generated from the table file as your current form.

If the table file contained column headings, each field on the form is labeled using the column headings as background text. If the table file did not include column headings, PRO/DataManager labels each field for you, starting with "Column 1:". The column headings are simply background text that you can change or delete by choosing "Modify Form" from the PRO/DataManager Main Menu—Additional Options. You can also modify the definitions of the fields on the form, move fields, or delete them by choosing "Modify Form."

PRO/DATAMANAGER MAIN MENU—ADDITIONAL OPTIONS

Pressing ADDTNL OPTIONS from the PRO/DataManager Main Menu displays a menu of the following additional options:

- ☐ Sort records
- ☐ Delete records
- ☐ Backup Form
- ☐ Modify Form
- ☐ Delete Form
- ☐ Rename Forms
- ☐ Information

Choose one of the options and press DO, or press EXIT to return to the PRO/DataManager Main Menu.

Sort records

This option lets you arrange your records in ascending or descending order. PRO/DataManager sorts your records by one or more fields of your choice. You select the field(s) you want to sort by, and choose how you want them sorted (ascending or descending order). If you specify more than one sort field, subsequent fields are used to settle ties if two records have the same value for a field. If you don't select any fields, then the records will not be sorted.

PRO/DataManager alphabetizes starting with the first character in a text field, so if you want to alphabetize your records by last name, for example, set up your form with the last name and first name as separate fields, and then sort your records using the last name field. Or, you could request that names be entered on the form last-name-first if you wanted to use only one field for a name.

PRO/DataManager sorts dates by year, then by month, then by day. Numbers are sorted by numeric value.

To sort your records:

1. Move the cursor to the primary field to be used for sorting your records, and press SELECT. The largest text field you can select is one containing 1005 characters.

2. Press ← or → to highlight the order in which your records will be sorted: "ascending" (A-Z or low-high) or "descending" (Z-A or high-low) order. Press SELECT.

3. The name of each field you select will be displayed at the bottom of the screen, left to right, in the order used to break ties during sorting.

    If you change your mind about a field you just added and decide not to select it, position the cursor at the beginning of that field and press REMOVE. You can only remove the most recently added field.

4. Press DO when you have finished selecting sort fields. Your records are automatically sorted, and you are returned to the PRO/Data-Manager Main Menu. All the records in the data file are sorted regardless of your current selection of records. After sorting, all the sorted records become your current selection of records.

Delete records

Choose "Delete records" if you want to delete your current selection of records or all your records. (The current selection of records are those just added or selected.)

It is a good idea to first back up your form onto a diskette before deleting any of the records its data file contains. This way, if you later decide to use those records, you can retrieve them from the diskette. Choose "Backup Form" to copy the form and its data file onto a diskette.

To delete all your records or just a specific selection of records, you must first make them your current selection of records, by choosing "Select records" from the PRO/DataManager Main Menu.

If you can't remember, or you want to verify which records are in your current selection, choose "Modify records" from the PRO/DataManager Main Menu to review your records, pressing NEXT SCREEN and PREV SCREEN to look at all the records in your current selection.

To delete the current selection of records or all your records, choose "Delete records" and press DO. A warning prompt is displayed, and you must type "yes" and press DO to confirm your choice. Or, type "no" and press DO or press EXIT to return to the PRO/DataManager Main Menu without deleting your records.

Backup Form

This option allows you to make a backup copy of a form and its associated data file on diskette. You can later retrieve the backup copy using "Retrieve an Old Form."

To back up a form, you must first make it your current form by choosing it from the Change Forms Menu.

Choose "Backup Form" and press DO. A menu is displayed that requests the data file name for the backup copy of the current form. Additional options are available by pressing ADDTNL OPTIONS. For example, press ADDTNL OPTIONS to specify a directory on the diskette. Refer to the *Professional 300 Series User's Guide for Hard Disk System* for a description of the additional options to the Name a File Form.

Leave the old file name or type a new file name and press DO to back up the form. You are then returned to the PRO/DataManager Main Menu. Your current form is the form for which you just created a backup copy. If you want, you can now delete the form from the hard disk using "Delete Form," to gain more space on the hard disk.

Modify Form

Choose this option to modify the definition of one or more fields on the current form, or edit the background text on the form. (To change the information that was typed into a field, choose "Modify records" from the PRO/DataManager Main Menu.) You can:

□ delete or retype background text

□ increase field widths

□ change the "Required:" attribute for one or more fields

□ move fields

□ rename fields

□ delete fields

□ add fields

Choose "Modify Form" and press DO. Your current form is displayed.

Use the ◁X key to delete any background text you want to retype. Or, you can type spaces or new text directly over the old text. To type new text, use the arrow keys to position the cursor where you want to begin, and type the text.

For a description of how to modify the fields, see "Modifying Your Form," earlier in this chapter.

> NOTE: Each time you modify the definitions of any fields on a form, you must then create one or more new report formats for the modified form. The old report formats for this form should be deleted using "Delete Current Format" from the additional options to the Reporting Menu. If you are simply revising the background text on the form or moving fields around on the form, you don't need to create a new report format.

Press DO when you are done, to return to the PRO/DataManager Main Menu.

Delete Form

Choose this option to delete the current form and its associated data file. PRO/DataManager asks you if you are sure you want to delete the form. Deleting a form removes all information about the form and its records, regardless of which ones are in your current selection. To delete the form, type YES and press DO. To preserve the form, press EXIT or type NO and press DO. It is recommended that you back up a form on diskette using "Backup Form" before you delete it from your hard disk. Then, if you decide later to use this form, you can retrieve it using "Retrieve an Old Form."

Rename Forms

Choose this option to rename one or more of your forms. The name of each form is displayed, and you can press NEXT SCREEN or PREV SCREEN to review the names. To change a name, simply type the new name over the old name. Press DO when you are done, to return to the PRO/DataManager Main Menu. The new name of a form replaces the old name on the Change Forms Menu.

Information

This option displays information about the form for users who want to use the form and its associated data file with *PRO/SORT* programs or other applications. The information displayed consists of the following:

Name—the name assigned to the field.

Type—the data type for this field:

- [ ] *text*—for fields that consist of alphabetic or numeric characters. Text fields consist of sequential bytes where each byte is a character.

- [ ] *date*—for fields that consist of dates, in the form yy/mm/dd. Date fields consist of 4 byte integers.

- [ ] *money*—For fields that consist of money amounts. Money fields consist of four byte integers, in double precision integer format. The low order two digits are for cents.

- [ ] *decimal*—For fields that consist of decimal numbers. Decimal fields consist of either 5 or 9 bytes, in double precision floating point format. The last byte is a format byte. The preceding bytes are either single (4 bytes) or double (8 bytes) precision floating point numbers.

- [ ] *integer*—For fields that consist of whole numbers. Integer fields consist of either two or four bytes, single or double precision integers.

Start, End—the starting and ending column of each field in the record. The start address indicates the field's position relative to other fields in the record. The length (in bytes) of the field is calculated by [end − start + 1].

Required—Specifies whether this field is designated a "required" field. Required fields must be filled in during data entry.

Constant—Specifies whether this field is constant, as controlled by the function key F19.

Glossary

background text

Explanatory text you type on a form that tells you what the form is for or what type of information the fields on the form contain. If you create a form letter, the background text is the body of the letter.

current form

The form with which you can work. To make a form your current form, choose it from the Change Forms menu. Or, choose "Create a New Form" from the Change Forms Menu—Additional Options, to create a new form and make it your current form.

current selection

The records with which you can work. Your current selection of records can be all the records associated with the current form, or some subset of them. If you add new records using the current form, the new records become your current selection. If you choose "Select records" from the PRO/DataManager Main Menu, the records you select become your current selection of records.

data base

Any collection of information that you want to work with. Each data base has one data file and one form associated with it. The data file consists of all the information in the data base, and the form is what you use to look at or make changes to the information.

data file

The file that contains all the information in a data base. Every form you create has one data file associated with it.

data type

The specific type of information that characterizes a field. The data types used by PRO/DataManager are date, money, text, integer, and decimal. A field can have only one data type.

dictionary file

A file that PRO/DataManager uses to store the names of all the files associated with your forms.

field

A location on a form where you type in a specific item of information.

field name

A name you assign to a field on the form that PRO/DataManager then uses to refer to that field. To display the names of all fields on the current form, choose "Information" from the PRO/DataManager Main Menu—Additional Options.

field width

The length of a field, in characters. The field width depends on the data type assigned to the field. For example, "date" fields have a fixed width of eight characters, while "text" fields can be up to 80 characters wide.

form

Consists of printed or typed text with blank spaces for inserting information. When using PRO/DataManager, you create a form to look at, or make changes to, information in a data base.

free format

A report format that contains background text and fields selected from the current form. An example of a free format report is a form letter.

PRO/Graph

A business graphics application in the Starter Kit that generates pie charts, bar, and line graphs in black and white or color. Using PRO/Graph, you can design and customize charts and graphs for business presentations or reports. PRO/Graph can also share information with PRO/DataManager using compatible files called table files.

PRO/SORT

A general purpose sorting utility that allows users to reorder data from one file into a new file.

PRO/Spreadsheet

An electronic spreadsheet application in the Starter Kit, used for numerical calculations and financial analysis. PRO/DataManager can use information that PRO/Spreadsheet creates, by using compatible files called table files.

record

Each individual entry of information associated with a form. Each record consists of background text and filled-in fields on one subject, such as an employee's payroll record.

report

A printed or displayed summary of information, formatted for presentation as a table or text.

report format

Defines how information in the data file will look when it is displayed or printed. Using PRO/DataManager's "Reporting" function, you can create tabular or free (form) report formats. Each data file can have up to 20 different report formats.

table file

A compatible file containing information that can be passed between PRO/DataManager and PRO/Graph. In addition, table files produced by PRO/Spreadsheet can be shared with PRO/DataManager. Table files have file type ".TAB."

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PRO/Spreadsheet

INTRODUCTION

PRO/Spreadsheet is an application designed to handle numerical calculations and financial analysis tasks, such as balancing a budget, completing an expense report, and generating sales reports. In addition, you can predict changes in your business finances by estimating expenses and revenue, and use PRO/Spreadsheet to calculate the results. With this type of financial information, you can make more judicious business decisions for your company.

What Is PRO/Spreadsheet?

On your screen, PRO/Spreadsheet displays a *worksheet* made up of intersecting *columns* and *rows*, exactly like an accounting worksheet. Each column is labeled with a letter, A through Z, and each row is designated with numbers 1 through 256. At each intersection of a column and row is a rectangular area called a *cell*, into which you will be entering information such as *values*, *formulas*, or *labels*.

You can enter a column or row label, such as Total Cost, a numerical value, such as 10, or a formula, such as $C2 = A2 + B2$. When you change a value in any cell, PRO/Spreadsheet automatically recalculates and updates all related entries.

You store this information in a special file location for subsequent retrieval in case you want to edit or print out PRO/Spreadsheet file(s). The next few sections explain how you can use all of PRO/Spreadsheet's features.

Installing PRO/Spreadsheet

PRO/Spreadsheet must be installed on your Professional before you can use it. Refer to the *Professional 300 Series User's Guide for Hard Disk System* for installation instructions.

GETTING STARTED

This section tells you:

- How to enter PRO/Spreadsheet
- How to get help
- What the screen looks like
- How to move around the worksheet
- How to correct typing errors
- What you can do using PRO/Spreadsheet commands
- How to exit from PRO/Spreadsheet

How to Enter PRO/Spreadsheet

If you have installed PRO/Spreadsheet on the P/OS Main Menu, press the MAIN SCREEN key to display the Main Menu screen.

Press the down arrow key until the pointer is at PRO/Spreadsheet, and then press the DO key.

If you have installed PRO/Spreadsheet on the Application Group Menu, choose Additional Applications from the P/OS Main Menu. Press the down arrow key until the pointer is at the group where you have installed PRO/Spreadsheet. Press the down arrow key until the pointer is at the PRO/Spreadsheet application, then press the DO key. At this point a worksheet is displayed on the screen.

Getting Help

When you are not sure what to do, press HELP. Information will appear on the screen to aid you. If multiple screens of help are available, pressing HELP or NEXT SCREEN again will show you more information, while pressing RESUME at any time will return you to your original work. You can continue pressing HELP, NEXT SCREEN, or PREV SCREEN (to see previous help information) until a message tells you to press RESUME (to return to your original work).

What the Screen Looks Like

As mentioned before, PRO/Spreadsheet displays screens divided up into vertical columns and horizontal rows. The columns are labeled A through Z across the top of the worksheet, and the rows are numbered 1 through 256 down the left-hand edge of the worksheet. The normal screen format displays up to 7 columns across and up to 20 rows down. The widescreen format displays up to 11 columns across and 20 rows down.

> **NOTE:** Try to think of each PRO/Spreadsheet screen as a "window" to look at part of your worksheet. As you display different screens, you are actually viewing different sections of the same worksheet.

In order to help you designate where information will be assigned on the worksheet, and to help you locate the point where you have assigned it, a cell name is given to each intersection of a column and row. For example, cell D7 is the point where column D and row 7 intersect.

Storage Space
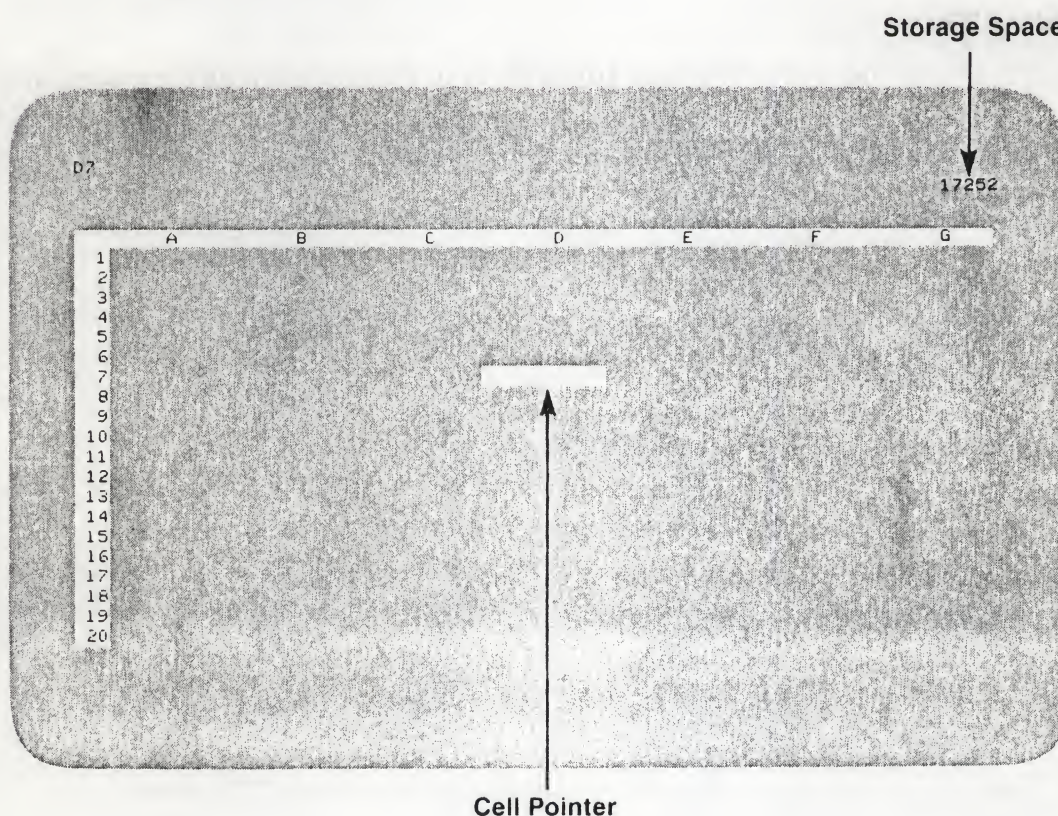
Cell Pointer

Cell Pointer

You will notice a rectangular, highlighted block on the screen (usually called the cursor). In PRO/Spreadsheet, this block is called the *cell pointer*, and by using it as you work, you will be able to type numerical information into a cell location. By pressing one of the arrow keys, you can move the cell pointer up, down, left, or right around the screen. Notice that as you do this, the cell name changes in the top *message line*. As noted before, this feature helps you keep track of the cell into which you are currently inserting information.

Storage Space

The numbers in the top right corner of the screen tell you how much space, in terms of the number of bytes, you can still use for PRO/Spreadsheet. Notice that whenever you place information in a cell, the number of bytes available to you is decreased. When space becomes very low, PRO/Spreadsheet displays a message reminding you of this fact.

Message Lines

Across the top of the worksheet are three lines of text, known as message lines. The first line is a current status line, that tells you which cell is "active," that is, receiving data, and what kind of information it is receiving.

The second message line displays the Command Menu, from which you will choose a *command* to perform different PRO/Spreadsheet activities. When you are entering information on the worksheet, the *Command Menu line* is absent, and instead, helpful message prompts are displayed in the same space.

The third message line displays the contents of a cell, such as a number or formula. If the cell pointer is on a cell that contains no information, this message line is empty. This message line is very useful if you want to review what formulas or numbers you entered in previously *active cells*.

Command Menu Line
   Active Cell
       Contents

```
A5
Command: Auto-evaluate Clear Display Exit Format Justify Print Repaint ...
90
        A        B        C        D        E        F        G
1    Units
2
3    21.00
4    76.00
5    90.00
6    76.00
7    56.00
8    77.00
9    43.00
10
11
12
13
14
15
16
17
18
19
20
```
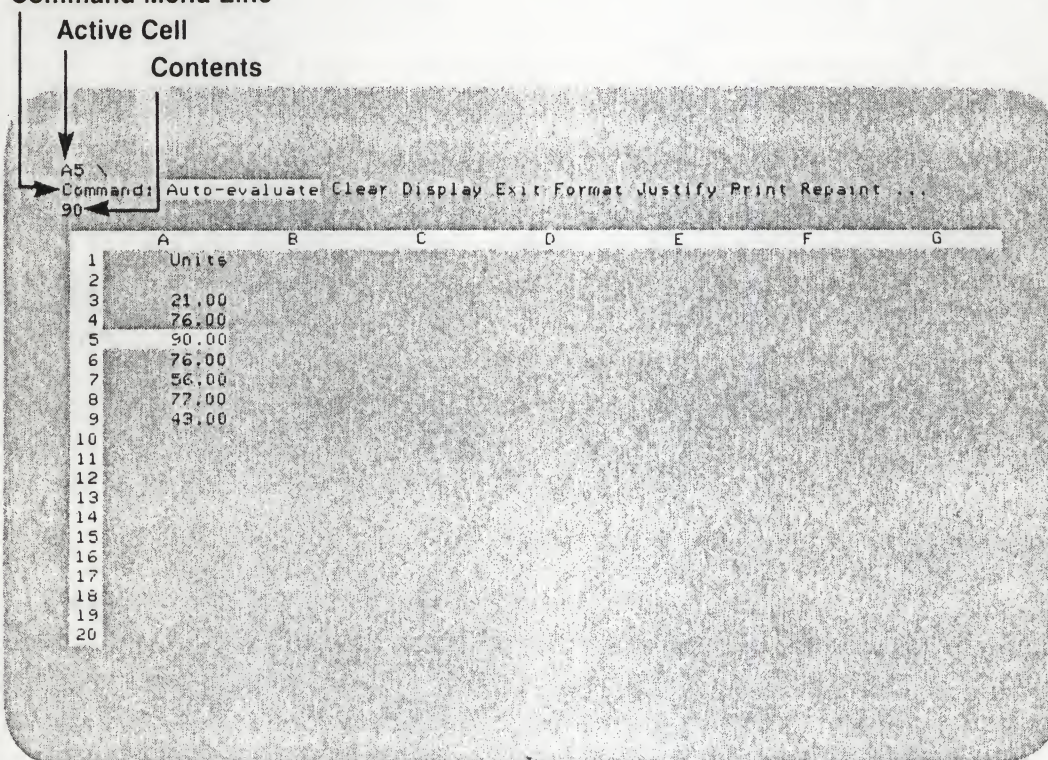
How to Move Around the Worksheet

You can move from cell to cell around the worksheet by using:

- [ ] The arrow keys

- [ ] The FIND key

- [ ] The PREV SCREEN and NEXT SCREEN keys
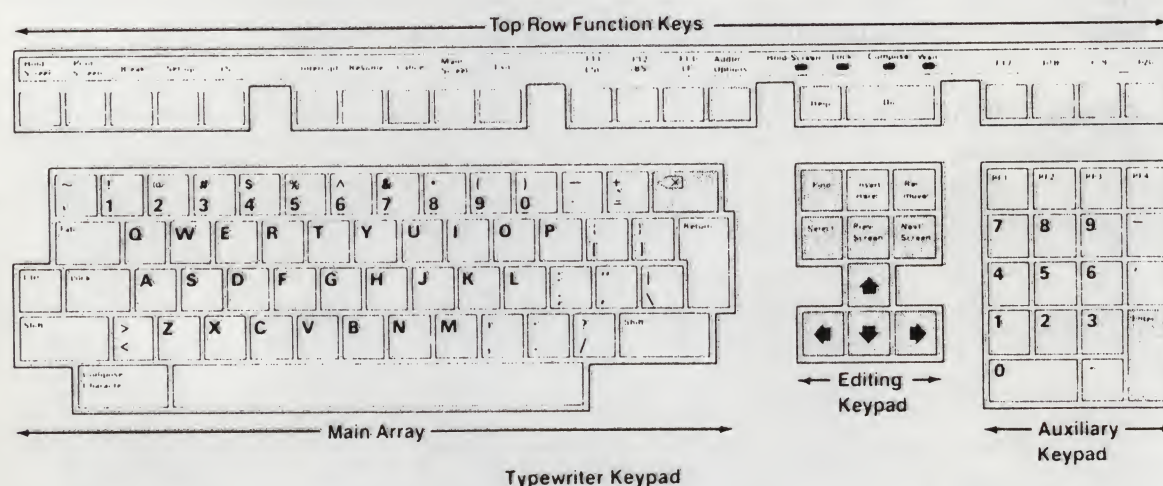
Figure 1
Keyboard

The Arrow Keys

You can move the cell pointer one cell at a time by using the arrow keys. These keys have up, down, left, and right arrows on them to guide you as you move the cell pointer around the screen. For example, if you are moving one cell to the right of your present position, press the right arrow key and the cell pointer moves to the next right cell.

When you want to move quickly forward or backward several columns, or from the current screen to a previous screen, you use the right and left arrow keys.

For example, if you want to move forward to column J on the next screen, (and you are currently displaying columns A through G), press the right arrow key until the cell pointer rests on the rightmost column of the current screen. When you press the right arrow key again, the cell pointer is shown resting on column H of the next screen. Now you can press the right arrow key twice to move the cell pointer to column J.

The FIND Key

The FIND key is located above the arrow keys. You can use the FIND key to get to a specific cell on the current screen or to move to a cell that is not currently displayed on the screen.

Press the FIND key, and the message line displays:

"Go to"

Enter a cell name and press RETURN.

The cell pointer moves to the designated cell; notice that the cell name is displayed at the top left corner of the screen.

As an example, suppose you want to enter the number 10 into cell N1, which is not on the current screen. First, press the FIND key, and when the message "Go to" appears, type N1 and press RETURN. The cell pointer is now located at N1. Now type 10 and press RETURN. You see that 10.00 is now displayed in cell N1, and the current status line has been cleared. The third message line displays your entry, which was 10.

Entry Placed into N1
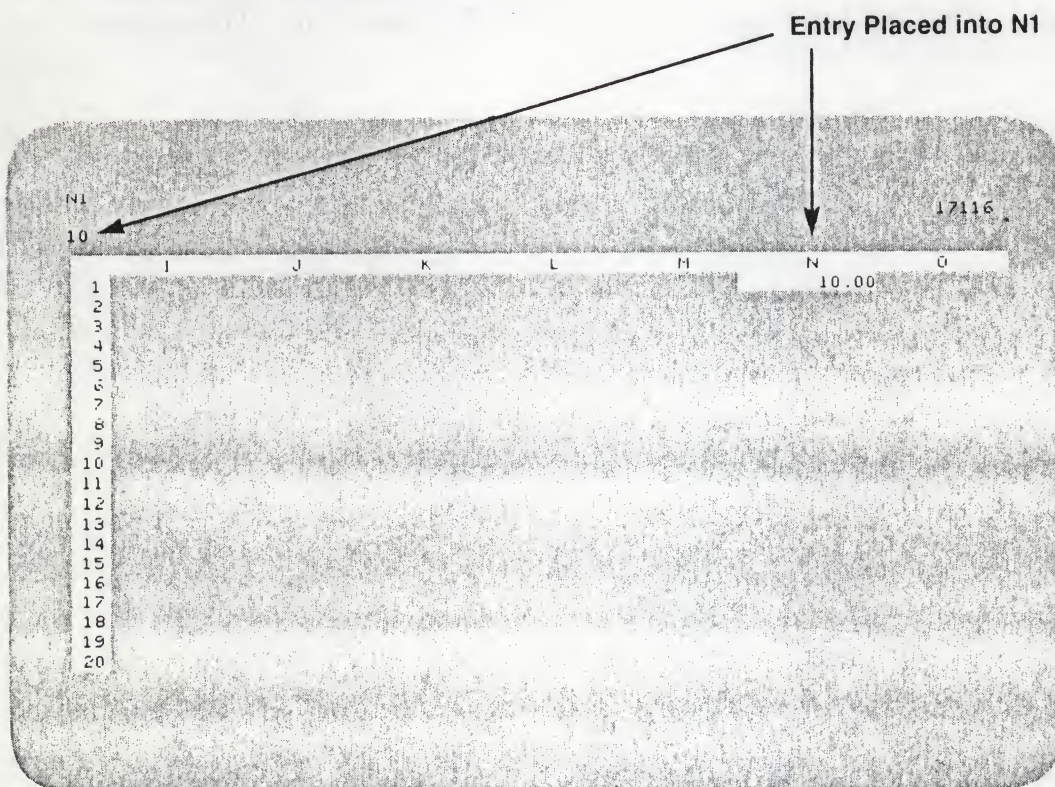
The PREV SCREEN and NEXT SCREEN Keys

When you want to move the cell pointer up or down several rows, but remain within the same column, you use the NEXT SCREEN or PREV SCREEN key. These keys will move the cell pointer (either up or down) 20 rows each time you press one of them.

For example, if the cell pointer is located at cell G50 on the current screen, pressing the NEXT SCREEN key will move the pointer to cell G70.

Using the keys described above makes it easier for you to view and update entries made on the current screen, as well as on other screens on your worksheet.

How to Correct Typing Errors

As you enter information on your worksheet, you can delete unwanted characters by using the ⟨X⟩ key, located above the RETURN key. Pressing the ⟨X⟩ key deletes characters to the left of the cell pointer. After deleting the unwanted characters, you can retype your entry(s).

The CANCEL key clears an entire entry using only one keystroke. When you press the CANCEL key once, all characters disappear from the current entry line.

What You Can Do Using PRO/Spreadsheet Commands

If you want to change the screen format to satisfy different business requirements, you can do this very easily with a PRO/Spreadsheet command. For example, you may want to add dollar signs to certain columns, make columns wider or narrower, or align values and labels on the right or left column margins.

All of the format commands are described in detail in the section, PRO/Spreadsheet Commands.

The Command Menu line, as mentioned previously, is the second message line above your worksheet. In order to tell PRO/Spreadsheet what you want to do, you must choose one of the commands shown on the line.

With the PRO/Spreadsheet commands you can:

☐ Widen or shorten columns

☐ Display specific columns and rows

☐ Add dollar signs and change number of decimal places

☐ Enable or disable automatic evaluation of entries for faster input of data

☐ Align values or labels on the right or left margin of a column

☐ Clear, save, and print a worksheet

☐ Edit an "old" worksheet

☐ Exit from a worksheet

How to Exit from PRO/Spreadsheet

When you have finished your work and want to leave PRO/Spreadsheet, press the EXIT key, and you return to the P/OS Main Menu.

> CAUTION: Use the EXIT key after you have completed your work and have stored the worksheet.

Another way of leaving PRO/Spreadsheet is by using the Exit command that is located in the Command Menu line. If you want to use this method, please refer to the Command Directory section.

USING PRO/SPREADSHEET

Using PRO/Spreadsheet is similar to entering figures with a pencil on an accounting sheet. With PRO/Spreadsheet, you see your work on the screen and use the keys on the keyboard to fill in the worksheet quickly and accurately.

This section describes:

☐ What kind of information you can put into cells

☐ How to put information into cells

☐ How to delete and cancel information put into cells

☐ PRO/Spreadsheet functions

☐ The meaning of cell messages

☐ How to store and print your worksheet

☐ How to edit another worksheet

What Kind of Information You Can Put into Cells

You can place three kinds of information into cells:

☐ Labels

☐ Arithmetic values

☐ Arithmetic formulas

Labels

A label is a column or row heading that contains either alphabetic and/or numeric *characters*. Labels specify a particular category, such as Sales or Total Cost, to help you enter values or formulas in the correct column or row.

For example, to enter the label SALES into cell A2:

1. Move the cell pointer over to A2.

2. Press the equal sign (=) key.

3. Press the double quote/single quote key.

4. Type in the label SALES.

5. Press **RETURN, ENTER,** or any arrow key to complete the entry.
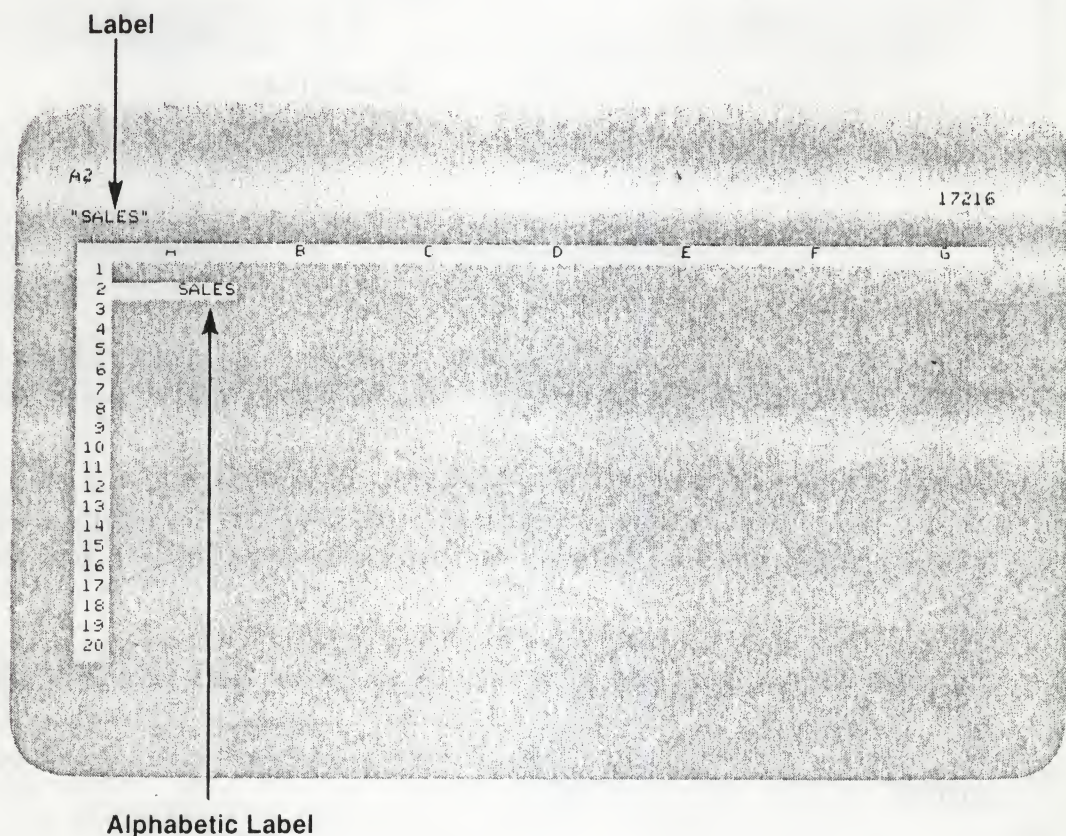
You can also enter numeric characters, or a combination of alphabetic and numeric characters as labels, by following the procedures described above.

```
C10                                              17056
554

        A          B          C          D          E          F          G
 1    FY 83                  FY 84
 2
 3     44.00
 4     98.00
 5    213.00
 6   7654.00
 7   9999.00
 8     77.00
 9                          88.00
10                         554.00
11
12
13
14
15
16
17
18
19
20
```

Values   Alphabetic and
                                Numeric Labels
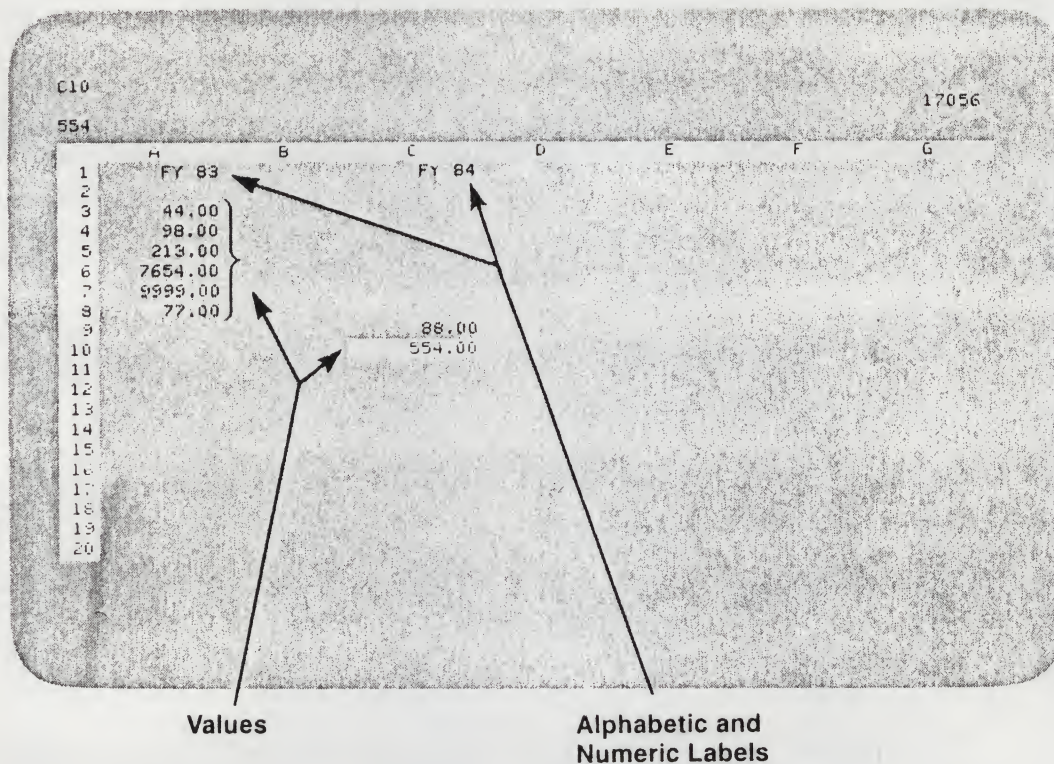
NOTE: The label MUST be entered with either single or double quotation
marks. The quotation marks are used to alert PRO/Spreadsheet that a label,
and not a numerical value or formula, is being entered.

If you do not start a label with quotation marks, your keyboard will beep to alert
you of the error. If this occurs, press the ⟨X⟩ key and reenter the label.

If you enter a label that contains more characters than the specified column
width, the label is shortened to that column width. As a helpful reminder, the
third message line displays the entire label when the cell pointer is on that
region.

For example, suppose you want to enter the label MORTGAGE COSTS into A5,
and column A width is set for 10 characters. Since the entire label consists of 15
characters, it will not fit in the column unless you change the column width
format.

Contents of Current Cell
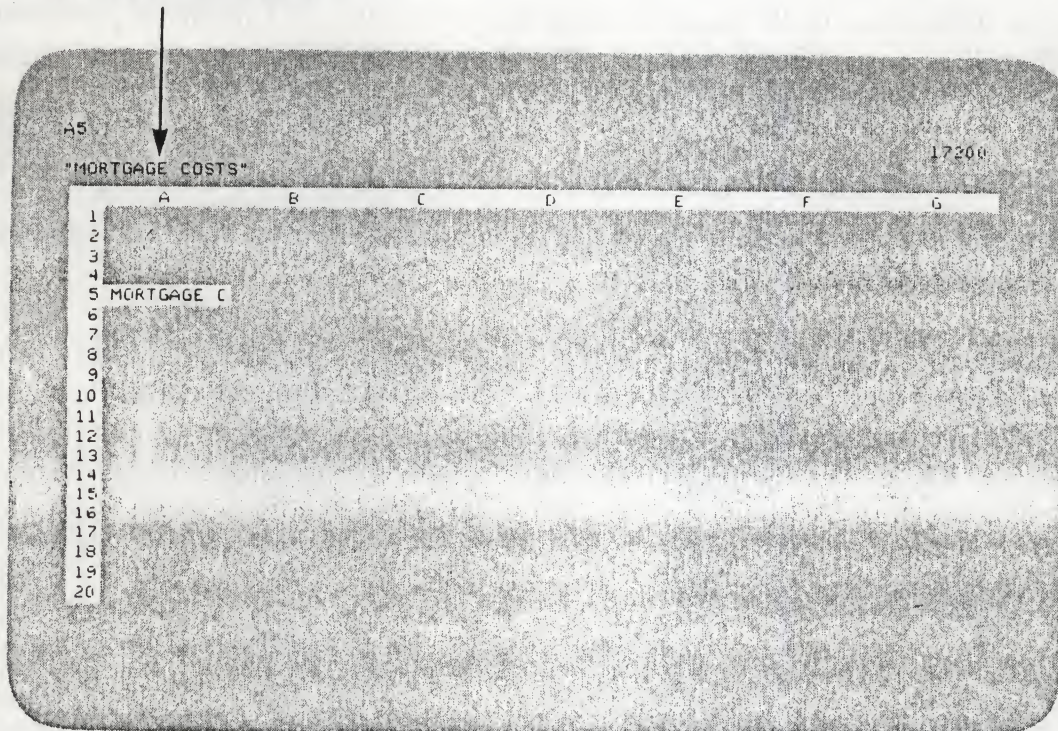
You can change the column width format by using the \W command to display the entire column label. You can find more information on the \W and other commands in the Command Directory section.

Arithmetic Values

An arithmetic value is any positive or negative whole number, zero, or a fraction. You can enter four kinds of numbers into a PRO/Spreadsheet cell:

☐ Positive and negative whole numbers, and zero

☐ Fractions expressed as decimals, such as 2.35, 0.089

☐ Numbers expressed in exponential form, that is, any number raised to a power

☐ Numbers expressed in scientific notation in the form [+ \ −]dE[+ \ −]i, where d specifies a decimal number, E is a symbol which means "times ten to the power of," i specifies a whole number, and [+ \ −] specify a positive or negative number. For example, the number 367 can be expressed in scientific notation as 3.67E2.

As you enter arithmetic values on the worksheet, remember that PRO/Spreadsheet can display up to 12 digits to the right of the decimal point. If you enter more than 12 digits, PRO/Spreadsheet performs calculations to within 17 digits of precision on all the values.

Arithmetic Formulas

An arithmetic formula is a rule that uses a combination of arithmetic values to calculate a new value.

For example, (A2 + B2) and (D6 * E5) represent formulas for addition and multiplication. The first, (A2 + B2), always adds the value in cell A2 to the value in cell B2. The second, (D6 * E5), always multiplies the value in cell D6 by the value in cell E5. Each example is a simple formula because only one rule is used for calculating the new value of cells (A2 + B2) and (D6 * E5).

Arithmetic Operations

There may be situations when you will be using combinations of more complex formulas, as in this example with several arithmetic operators, B4 + 2 (C4-G5) * 6. This example contains three operators: addition, subtraction, multiplication.

When you enter more than one arithmetic formula in a cell(s), as in the example above, PRO/Spreadsheet evaluates these operators in a particular sequence.

The order in which operators are evaluated is as follows:

1. A formula contained in parentheses

2. A formula that contains *exponentiation*

3. Multiplication and division operations in a left to right sequence

4. Addition and subtraction operations, in a left to right sequence

If a formula contains more than one arithmetic operation from the same level of evaluation, PRO/Spreadsheet will calculate each formula in a **left** to **right** sequence, and display the result in the designated cell location.

For example, the formula, F7*H7/6, contains the two operations, multiplication and division. The multiplication operation, F7*H7, is calculated first, and then the division operation, /6, is calculated next.

Formula

Result
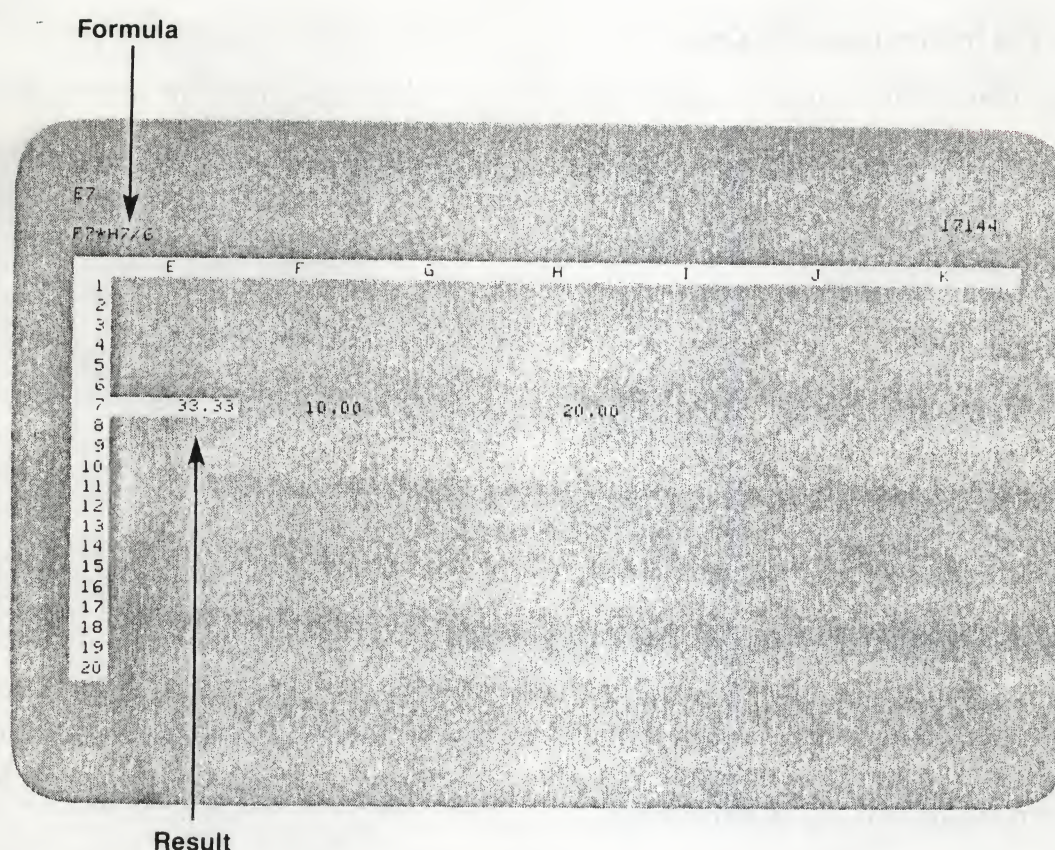
The following table will help you quickly look up the calculation sequence.

Table 1
Order of Arithmetic Operations

Operation	Symbol
1. Parentheses	( )
2. Exponentiation	^
3. Multiplication	*
4. Division	/
5. Addition	+
6. Subtraction	–

The methods for entering arithmetic values and formulas are described in the following section.

How to Put Information into Cells

You can place values and formulas into cells using several different methods:

- Placing the information directly into a current cell
- Using the assignment statement
- Using the cell *designators*
- Using the *range operator*
- Using the SELECT key to enter values into a *range* of cells

> NOTE: If you place information into a cell that already contains a value or formula, its contents will be replaced by this new information and the original contents will be deleted.

Placing Information Directly into the Current Cell

Placing a value, formula, or label into a current cell makes the current cell active because you are entering data into it. The *active cell* is always at the location of the cell pointer, and the name of the current active cell is always displayed on the top message line of the screen.

When you place information into the current cell:

- Move the cell pointer to the cell.
- Type in a value.
- Press RETURN, ENTER, or any arrow key to complete the entry.

If you want to continue entering information into other cells, use the arrow keys or the FIND key to move the cell pointer to the next cell, and enter the information.

Using the Assignment Statement to Enter Information

Another method of placing values, formulas, or labels directly into a current cell is by using the Assignment Statement. This method is particularly useful when you are entering data quickly and prefer to enter it at the current status line at the top of your screen. This eliminates having to move the cell pointer to each cell location to enter the data.

When you use the Assignment Statement to enter information, the cell pointer can be positioned anywhere on the worksheet.

For example, if the cell pointer is located on A2 (with A2 displayed in the current status line) you can enter data into D7 without moving the pointer to D7 by using the Assignment Statement:

1. Type in D7=45.

2. Press **RETURN, ENTER,** or any one of the arrow keys to complete the statement.

3. The value 45 is entered into D7.

You can continue entering values into other locations in the same manner.

Using Cell Designators to Enter Values

You can enter a value into a cell by using a cell designator in place of the cell name. Cell designators are used as **pointers** to other cells that contain the information you need. When you use cell designators, you name a cell by designating its column and row. The cell designator is always enclosed in brackets [ ] in the following format:

[column,row]

[3,3]

In the example, [3,3] corresponds to cell C3. The first 3 corresponds to column C which is the third column on the screen. The second 3 corresponds to row 3, which is the third row on the screen.

Cell designators can also be used to create internal referencing with other cells. In the following example cells A1 and A2 will be used as cell designators for A3 and C3.

1. Place 3 in A1

2. Place 3 in A2

3. Place 45 in C3

4. Enter A3=[A1,A2]

5. The value 45 is placed in cell A3

A3 = [A1,A2]
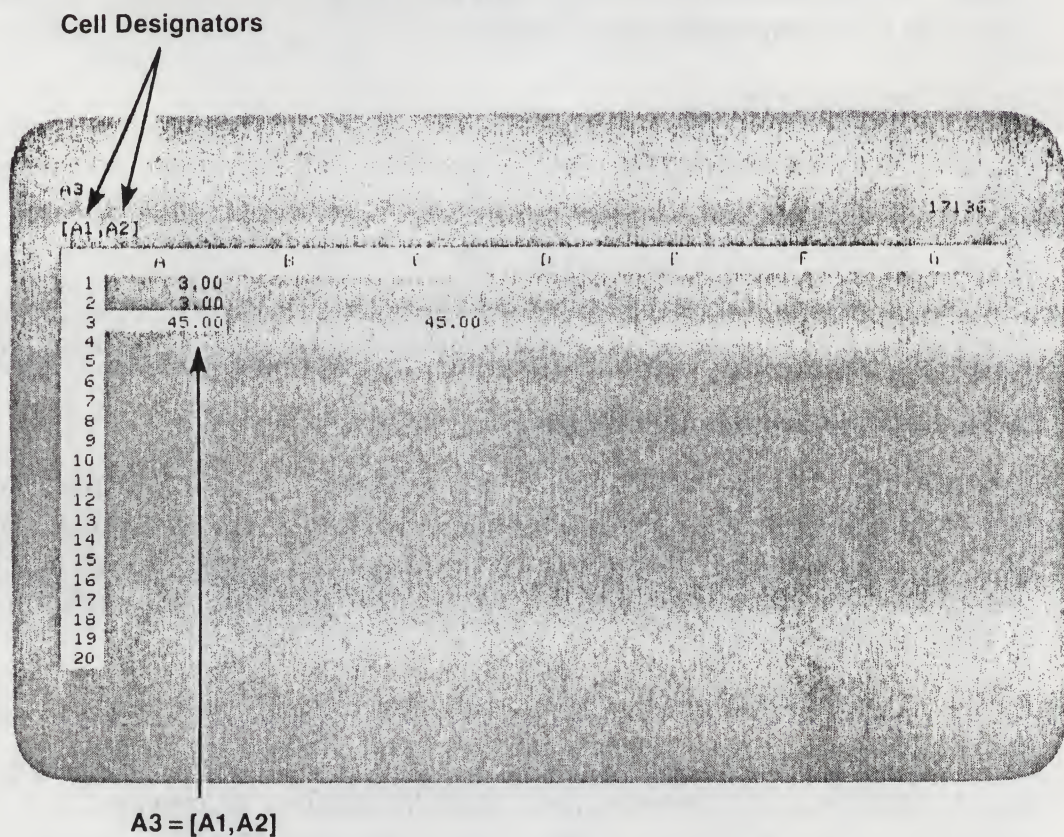
Using the Range Operator (:)

You can enter information into a range of cells by linking the **first** and **last** cell in the range with a colon (:). A range can include those cells in several columns across a worksheet as in A2 **through** D2 (A2:D2) or, it can include **all** the cells in a particular column(s) as in A1 **through** C20 (A1:C20).

Range Area

Range Area
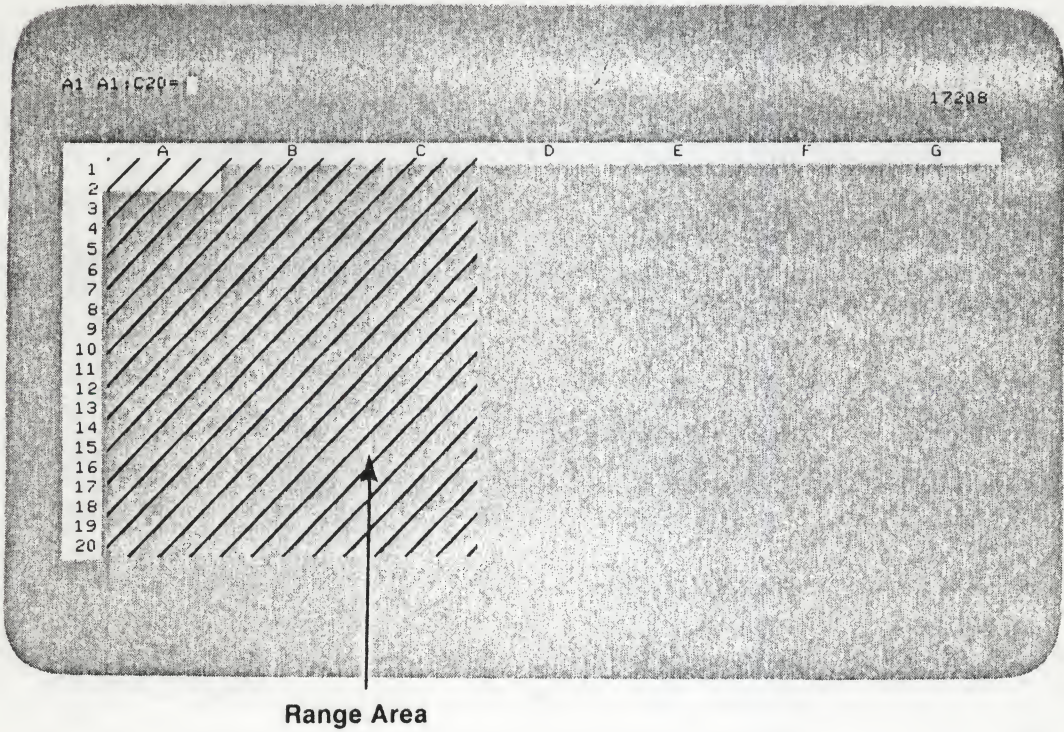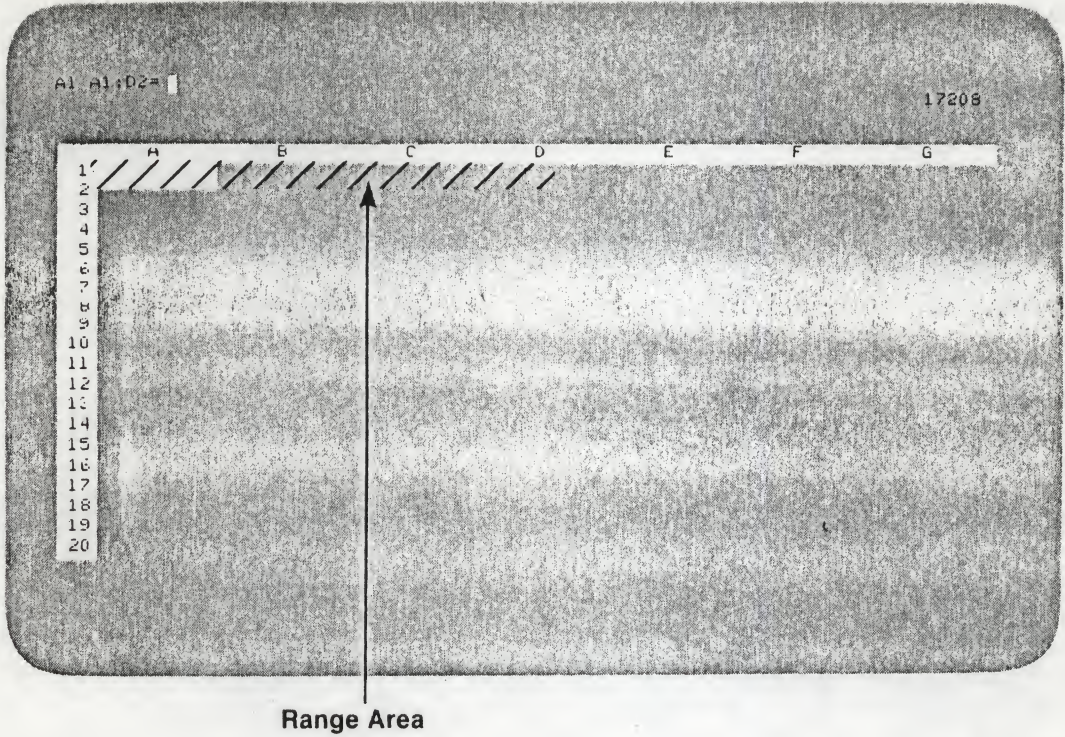
For example, if you wanted to enter the salary $20,000 into cells in the range A2 through D2 (A2:D2), you would enter A2:D2=20000 and press RETURN.

Range

Value

A1 A2:D2=20000   17096

	A	B	C	D	E	F	G
1							
2	20000.00	20000.00	20000.00	20000.00			
3							
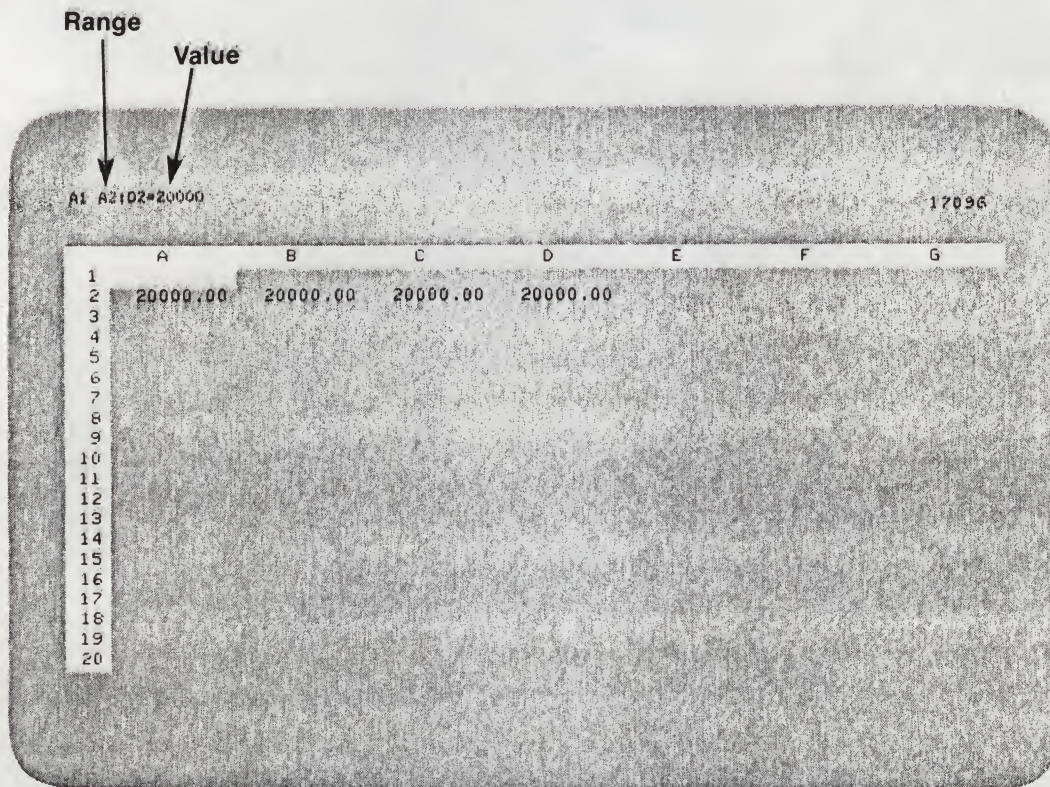
It is helpful to remember that a range can be any size you want, as long as you specify the beginning and ending cell of the range.

> NOTE: PRO/Spreadsheet cannot interpret percent signs when performing calculations, therefore, it is important that you **convert** all percentages into their decimal equivalents.

Using the SELECT Key

Another technique for placing information into a range of cells, is by using only the SELECT key, or using SELECT in conjunction with FIND.

If you want to enter the value 40 into the cell range D4:G4 using the SELECT key, follow these steps:

1. Place the cell pointer on the first cell in the range, D4.

2. Press SELECT.

3. Move the cell pointer to the last cell in the range.

4. Type 40.

5. Press RETURN or one of the arrow keys to complete the entry.

Notice that the range of cells, D4:G4, now contains the value 40.
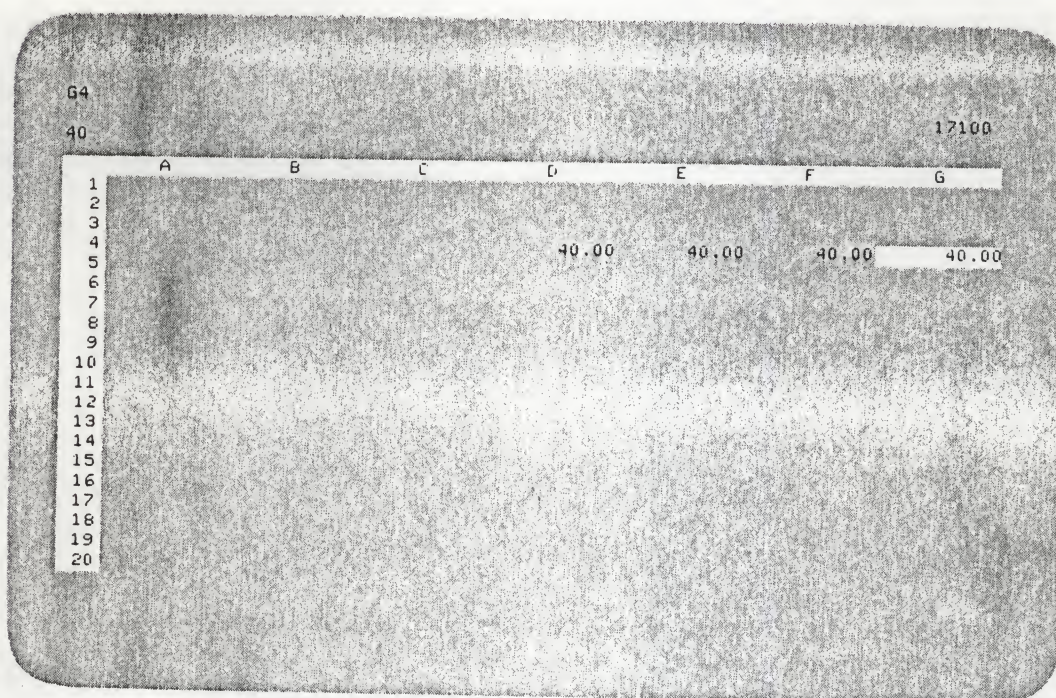
Using the SELECT and FIND Keys

As mentioned previously, you can enter information into a range of cells by using the SELECT and FIND keys to locate the cells. If you want to enter the value 40 into the cell range J1:L20 using the SELECT and FIND keys, follow these steps:

1. Place the cell pointer on the first cell in the range, J1.

2. Press SELECT and the first cell of the range is displayed.

3. Press FIND and the screen displays a prompt:

    Go to:

4. Enter the last cell of the range, L20.

5. Press RETURN or one of the arrow keys to complete the entry.

6. Type 40.

Notice that the range of cells, J1:L20, now contains the value 40.

Canceling a Range Selection

While you are entering information into a range of cells, you may decide that you want to cancel it and enter different information. Before pressing RETURN to complete the entry:

1. Press CANCEL to delete the current information.
2. Enter the new information.
3. Press RETURN to complete the entry.

Deleting Values from Cells

When you want to delete a value from a cell:

- ☐ Type the cell name.
- ☐ Press the equal (=) sign key.
- ☐ Press RETURN, and the cell's contents disappear.

Copying Values or Formulas from a Source Cell

When you want to *copy* a formula or value from one cell into other cells of your worksheet, use the at sign (@) key, located on the top row of character keys. Using this key copies the contents of a cell, or group of cells, to another cell on your worksheet. The current status line displays the new formula as soon as you press the "@" key.

When using the at sign (@) key there are two points to remember:

- ☐ The cell name **from** which you want to copy is **always** entered **before** the "@" character.
- ☐ This cell name must contain a formula or value, not text.

As an example try using the "@" key in the following exercise:

1. Enter the value 200 into A1, and 100 into B1.

2. Enter the operation (A1-B1) into A3.

3. A3 now contains the result of the subtraction operation, which is 100.

4. Move down to A5 and enter .01*A3@.

5. Press **RETURN** or any arrow key to complete the entry.

6. The current status line displays the new formula .01*((A1-B1)).

7. A5 now contains the result of the formula, .01 *A3, and the formula is copied into A5.

New Formula

```
A5

.01*((A1-B1))                                          15744
        A           B        C        D        E        F        G
   1    200.00    100.00
   2
   3    100.00
   4
   5      1.00
   6
   7
   8
   9
  10
  11
  12
  13
  14
  15
  16
  17
  18
  19
  20
```
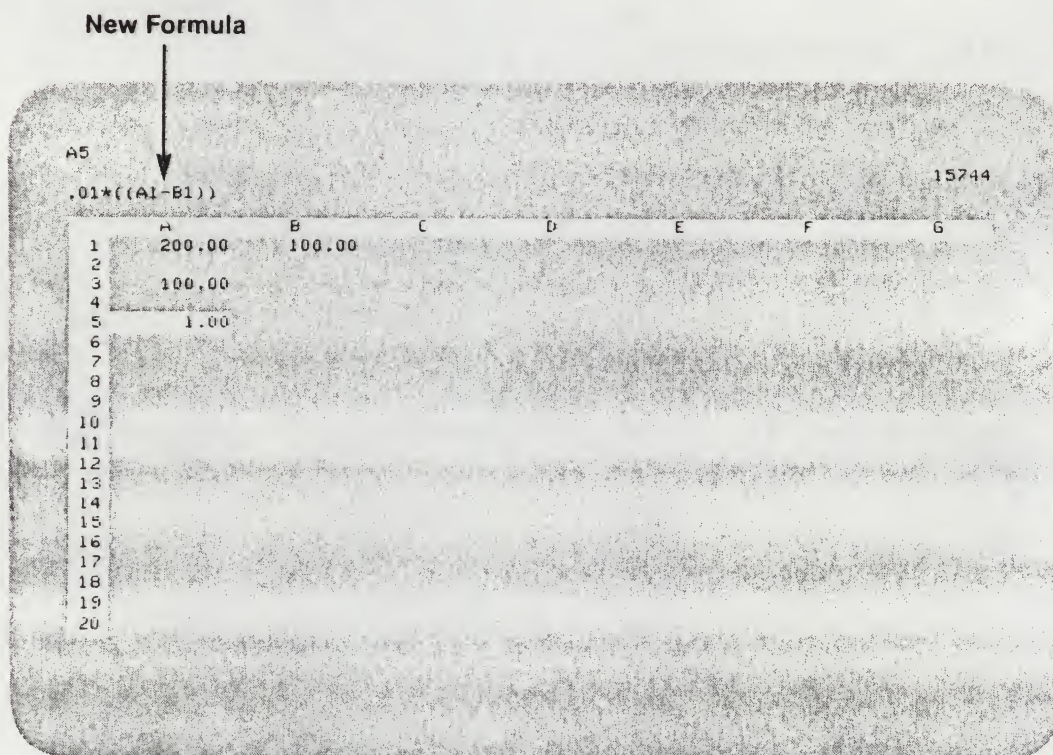
Placing Values or Formulas Into Off-Screen Cells

You can enter information into off-screen cells by using the methods described in the previous section. For example, if your current screen shows cells A1 through G20 and you want to enter the number 5 into J3, which is on the next screen, enter the statement:

    J3 = 5

Press RETURN.

The number 5 is placed in J3.

Remember, when you are working on one screen and want to enter information into cells that are on another screen, you can use the range operator. For example, if you are displaying columns A through G and want to enter the value 16000 into columns X, Y, and Z, use the range operator:

X1:Z20 = 16000

PRO/Spreadsheet Functions

PRO/Spreadsheet functions are built-in mathematical operations that can be carried out on one or more values. Using functions eliminates the need to re-type frequently-used operations or formulas.

For example, instead of entering a formula for addition, A1= B1+C1+D1+E1, you would enter the #SUM function, #SUM(B1:E1).

PRO/Spreadsheet functions must be entered with a pound sign (#) followed by the name of the function and, if required, a list of *arguments*.

An argument is a reference made to a value in an individual cell, or it may be a reference to values in a range of cells. The function uses arguments to calculate its own value.

The list of arguments is always enclosed in parentheses and the individual arguments are separated by commas.

Here is an example of a list of arguments that refers to a range of cells and individual cells:

#SUM(A1:A10,B3,C4)

This example shows that you are including all the values in the range A1 through A10, the value in B3, and the value in C4. (Notice that arguments that refer to several cells individually must be separated by commas.) If you then wanted to place this sum total into another cell location, A20, you would enter:

A20 = #SUM(A1:A10,B3,C4)

SUM Total

The following PRO/Spreadsheet functions require the use of arguments:

- ☐   #SUM function

- ☐   #MIN function

- ☐   #MAX function

- ☐   #AVERAGE function

- ☐   #COUNT function

The #SUM function adds a list of values and gives the result. For example, you might want to add up sales for a four-year period, with the value for sales in cells A4 through A7, and place the total in A20. Using the range of cells (A4:A7) as arguments, you would type the following:

A20 = #SUM(A4:A7)

and the total of the cells would appear in A20.

```
A20                                                    15968
#SUM(A4:A7)
            A         B       C        D      E       F        G
  1
  2
  3
  4      5430.00
  5      5600.00
  6     24500.00
  7      3500.00
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20     39030.00  ◄────┐
                       │
```

SUM Total
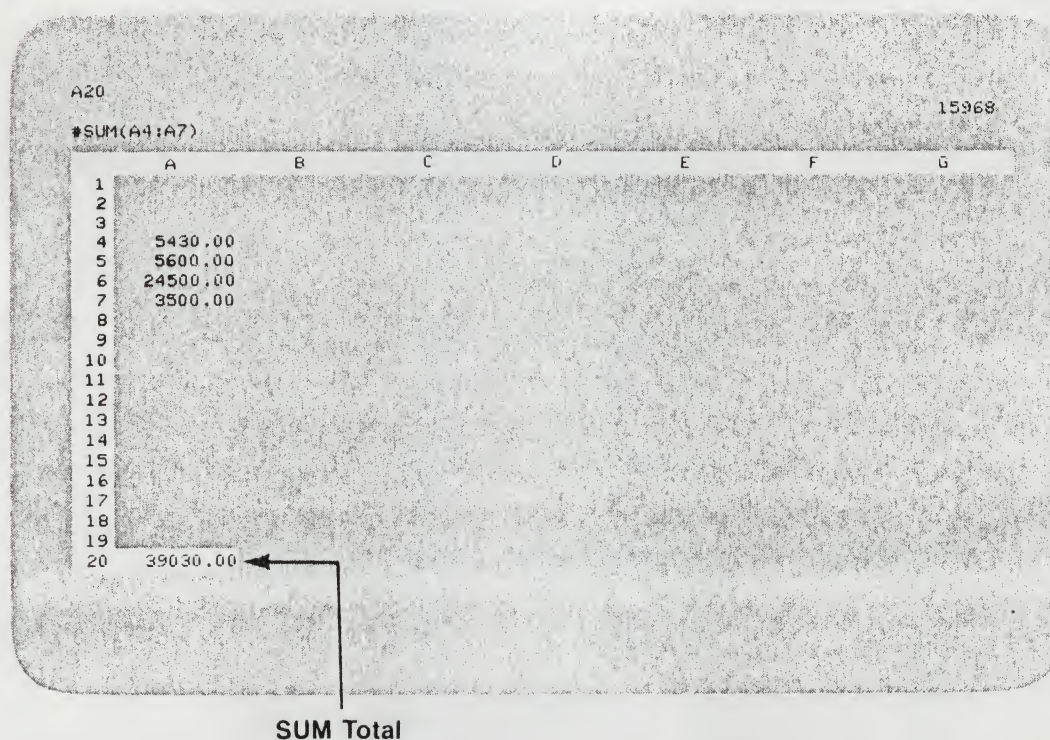
The #MIN function recovers the smallest number value from a list of arguments. For example, to discover the smallest sales amount in the list A4:A7 and then place it in A22, type the following:

A22 = #MIN(A4:A7)

The #MAX function yields the largest number value from a list of arguments. For example, to discover the largest sales amount in the list A4:A7, and then place it in A23, type the following:

A23 = #MAX(A4:A7)

```
A22

#MIN(A4:A7)                                                  15924
        A          B          C          D          E          F          G
4    5430.00
5    5600.00
6   24500.00
7    3500.00
8
9
10
11
12
13
14
15
16
17
18
19
20   39030.00
21
22    3500.00 ◄
23   24500.00 ◄
```

Maximum Value

Minimum Value

The #AVERAGE function finds the average value of the cells in the list of arguments. For example, using the same values as before, you could figure out the average sales value over the same four month period, and place it in A10, by using the entry:

A10 = #AVERAGE(A4:A7)

The value is placed in A10.

Average Value

The #COUNT function counts the number of values in a list of arguments. In other words, it ignores cells that contain only a label. For example, suppose you want to count the number of values in the list of arguments N1:N15 and place the result in N20, you would type:

N20 = #COUNT(N1:N15)

```
N20
                                                          15720
#COUNT(N1:N15)
        M           N           O       P       Q       R       S
   1
   2               REVENUES
   3
   4
   5
   6               FRINGE
   7
   8               TRAVEL
   9
  10                33.00
  11              2123.00
  12                65.00
  13               987.00
  14               900.00
  15
  16
  17
  18
  19
  20                5.00  ◄─────────────┐
                                        │
                                        │
                                   COUNT
```

The following PRO/Spreadsheet functions do not require arguments:

□   #ROW function

□   #COLUMN function

The #ROW and #COLUMN functions specify the numeric values of the current column and current row. The current column and row **always** indicate the location of the cell pointer. The numeric value of a column is derived from its physical location on the worksheet, with column A designated as 1, column B designated as 2, and so on. The numeric value of a row is derived from its numbered position on the worksheet. You can use the functions in the order: row, column, or column, row.

For example, using the #ROW and #COLUMN functions to derive the value of D7:

1.   Place the cell pointer on D7.

2.   Enter #ROW and press RETURN. The value 7 is entered into D7.

3.   Enter #COLUMN and press RETURN. The value 7 is replaced by the new value, 4.

If you use the #ROW and #COLUMN functions in conjunction with cell designators, you can specify the location of other cells (known as target cells) in relationship to the current row and column. In other words, #ROW and #COLUMN functions are the "pointers" to a target cell's row and column. You indicate the number and direction of the target cell from the current cell with either a + sign, (which means you move to the right of the current cell), or a − sign, (which means you move to the left of the current cell).

The #COLUMN and #ROW functions are **always** enclosed in brackets [ ] and are entered in the order [#COLUMN,#ROW] when used with cell designators.

As an example of a current cell and target cell consider the following entry and its interpretation:

Current   Target

A1:A20 = [#COLUMN + 1,#ROW]*2

Interpretation:

☐ #COLUMN +1 moves one column to the right of column A, which is all of column B.

☐ #ROW includes rows 1 through 20.

☐ *2 multiplies the values in B1:B20 and places them in A1 through A20.

Target Column

Current Column

The Meaning of Cell Messages

As you adjust the financial information to reflect changes in your business's growth, one of these new entries could affect the information already in the cells. In most cases, all affected cells will be changed immediately. Occasionally, however, there may be a delay while one or two cells wait for additional information.

For example, a cell may have to wait for the result of a calculation in another cell before a new value is displayed. When this happens, cell messages are displayed in the "waiting" cells.

One of the following messages may appear in a "waiting" cell:

☐ **???unkn???** This means that one or more of the cells used in a formula does not contain numeric information, or an invalid reference was made to a cell. If a cell(s) contains text and is included in a formula, this message will be displayed. When you provide the numeric information for these cells, this message disappears.

☐ *****circ***** This means that the cell's formula is circular, that is, the cell's value ultimately depends on its own contents.

☐ **-pend-** This means that the cell's value depends on the value of other cells that may be empty or may themselves be pending additional information. When you provide this additional information, this message disappears.

How to Store and Print Your Work

When you want to save a current worksheet or edit an "old" worksheet, you select "Storage" from the Command Menu line to begin this procedure.

Storing a Spreadsheet (\ S)

When you choose Spreadsheet from the Storage subcommand menu, the entire worksheet, columns A through Z and rows 1 through 256, is stored in a file that also *saves* all of the values, formulas, and formatting characteristics.

In order to store your worksheet for future use, you name the worksheet and place it into a file. Any file you create for PRO/Spreadsheet must have the PRO/Spreadsheet file extension, .WRK. For example, you could name an Expenses worksheet, Expenses.WRK.

1. Choose "Storage" from the Command Menu line.

    Subcommand menu prompt: Storage Action? Read Write

2. Choose "Write" to store your current worksheet.

    Subcommand menu prompt: Write What? Spreadsheet Table

3. Choose "Spreadsheet."

    Message line prompt: Enter output filename

    This prompt is displayed if your current worksheet is a newly created one.

4. Give your file a unique name and press RETURN.

Storing a Table File for Graphing (\ S)

When you choose Table from the storage subcommand menu, only the values and labels of the range you specify, are stored in a special file known as a table file. The table file consists of information stored in columns and rows that form a table. The formatting characteristics are not saved.

1. Choose "Storage" from the Command Menu line.

    Subcommand menu prompt: Storage Action? Read Write

2. Choose "Write" from the subcommand menu.

    Subcommand menu prompt: Spreadsheet Table

3. Choose "Table" from the subcommand menu.

    Message line prompt: Enter Table Range

4. Using the range operator, or the SELECT and FIND keys, enter a range of columns and rows and press RETURN.

    Message line prompt: Enter Table File Name

5. Give your table file a unique name and press RETURN.

This file can then be read by PRO/Graph to create a bar, line, or pie chart, or it can be read by PRO/DataManager to store data in a data file.

Printing the Worksheet (\ P)

In order to print a worksheet, you must create a print file by following these steps:

1. Choose "Print" from the Command Menu line.

    Message line prompt: Enter print filename:

2. Enter the name of the file.

3. Press RETURN and a printable file is created.

To print out a file:

1. Leave PRO/Spreadsheet.

2. Return to the P/OS Main Menu.

3. Enter Print Services and print the file.

How to Edit Another Worksheet

1. Choose "Storage" from the Command Menu line.

   Subcommand menu prompt: Storage Action? Read Write

2. Choose "Read" to edit an existing worksheet.

   Message line prompt: Enter input filename:

3. Type in the name of an existing file worksheet, for example, SALES.

4. Press RETURN, and begin to edit your worksheet.

When you have completed your work, select "Write" to store the file.

PRO/SPREADSHEET COMMANDS

This section tells you how to display the Command Menu line, how to select a PRO/Spreadsheet command and presents descriptions of the commands, in alphabetical order.

When you want to look up a command quickly, refer to Table 2, Reference Guide for PRO/Spreadsheet Commands.

Displaying the Command Menu Line

To display the Command Menu line, press the ADDTNL OPTIONS key or the backslash (\ ) key, located near the RETURN key. The backslash key indicates to PRO/Spreadsheet that you will be entering a command character in order to carry out a specific action. You are now ready to begin entering commands to tell PRO/Spreadsheet what you want to do.

```
A1 \
Command: Auto-evaluate Clear Display Exit Format Justify Print Repaint ...
         A          B          C          D          E          F          G
 1
 2
 3
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20
```

```
A1 \
Command: ... Storage Width
         A          B          C          D          E          F          G
 1
 2
 3
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20
```
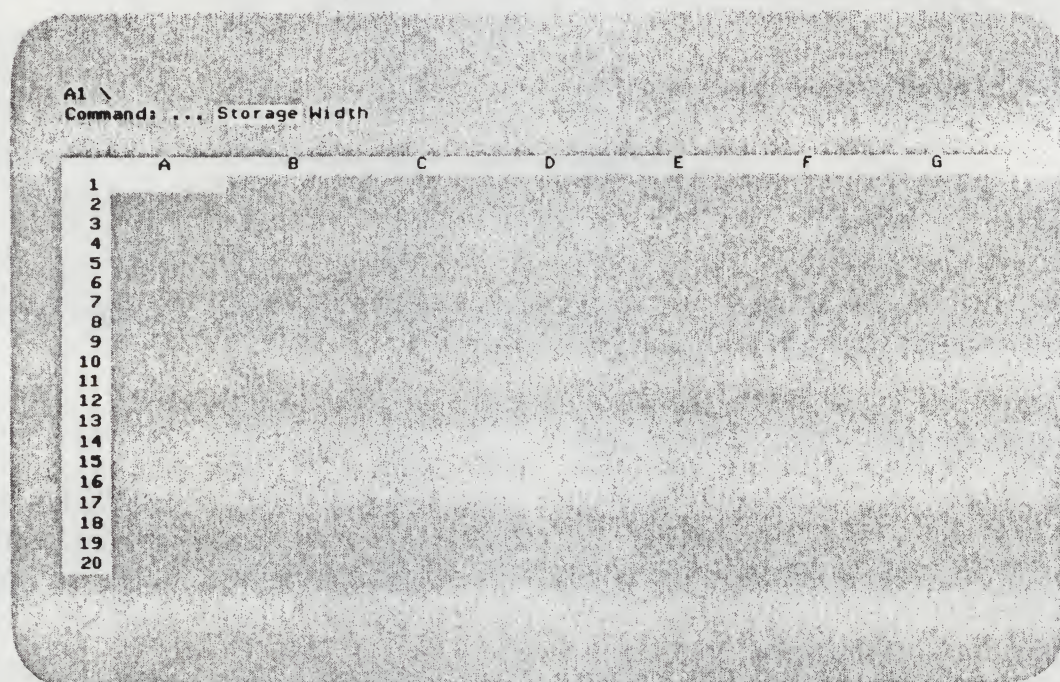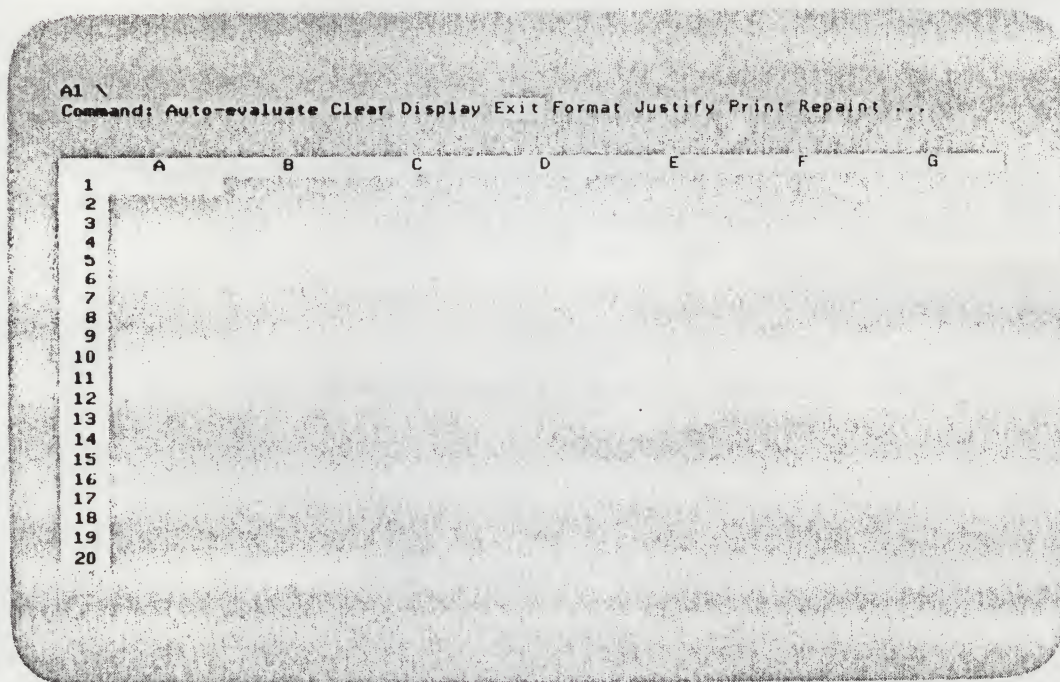
Selecting a PRO/Spreadsheet Command

There are two methods for selecting commands from the Command Menu line.

Method #1

Press the right or left arrow key to move the cell pointer over to your selection.

Press RETURN to complete the selection.

Method #2

Type in the first letter of the command.

Press RETURN to complete the selection.

Note that when using method #2, all commands **must** be entered by typing in the first letter. If you make a mistake and type in a non-command character, your keyboard will "beep", which is a reminder for you to press the correct key.

Command Directory

The following directory lists the PRO/Spreadsheet commands and provides you with helpful explanations of how they are used. For certain commands, you will make selections from a subcommand menu prompt display before you can complete the command entry. These subcommand menu prompts are listed for you as well.

AUTO-EVALUATE (\A)

PRO/Spreadsheet reviews and evaluates values automatically as you enter them; it calculates and updates all values in a matter of seconds. However, there may be times when you want to enter data rapidly, and avoid even the slight delay that auto-evaluation causes. To do this, choose "No Auto-evaluate." You can enter the command before or after you make any entries on the worksheet, or at any point during your work.

Subcommand menu prompt: Auto-evaluate? No Yes

If you choose "No," entries will not be automatically evaluated, and you will experience no waiting time.

If you choose "Yes," entries will be continually evaluated, and you will experience some waiting time.

CLEAR WORKSHEET (\C)

This command discards all data on the worksheet and resets all format characteristics. It sets up a clean worksheet so that you can start over again.

Subcommand menu prompt: Really clear sheet? No Yes

Choose "No" or "Yes," or type in N or Y.

> **CAUTION:** If you want to save the current worksheet, you must store it before clearing it.

DISPLAY CONTROLLER (\D)

This command displays only the specific columns and rows that you request. You can choose single columns and rows, or a range of columns and rows.

Subcommand menu prompt: Enter columns and/or rows to display:

Formats for displaying:

range of columns	A:G
range of rows	1:10
range of columns and rows	A:G,1:10
2 column ranges	A:G,K:P
2 row ranges	1:10,20:30

To display all of your worksheet screens, enter:

    \D A:Z,1:256

EXIT (\E)

This command allows you to leave PRO/Spreadsheet and return to the P/OS Main Menu or the Application Group Menu.

Subcommand menu prompt: Really Exit? No Yes

Choose "No" or "Yes."

FORMAT (\F)

This command adds a dollar sign ($) and changes the number of decimal places to each entry in the column(s) you have selected.

PRO/Spreadsheet automatically assigns two decimal places for each value. The Format command allows you to increase or decrease the number of decimal places within any column you select. The maximum number of decimal places that can be displayed is 12; the minimum number that can be displayed is 0.

Subcommand menu prompt: $ dollar Decimal

Choose "$" or "Decimal."

Decimal Prompt: Enter number of decimal places

Enter the number of decimal places you want.

JUSTIFY (\J)

This command aligns values or labels on the right or left margin of the current column.

Subcommand menu prompt: Justify what? Label Value

Choose either "Label" or "Value."

Subcommand menu prompt: Justify how? Left Right

Choose either "Left" or "Right."

PRINT WORKSHEET (\P)

This command prints out only the current screen of your worksheet.

Subcommand menu prompt: Enter print filename

Enter a name for the print file and the file extension, .DOC, as shown:

name.DOC

Return to the P/OS Main Menu and select "Print Services" to print out the file.

REPAINT SCREEN (\R)

This command repaints the screen in an 80-column or 132-column format.

Subcommand menu prompt: Repaint how? Normal? Widescreen?

Choose "Normal" or "Widescreen."

In 80-column format the screen holds 80 characters across (normal width).

In 132-column format the screen holds 132 characters across (widescreen).

STORAGE (\S)

This command allows you to save a "new" worksheet or table file and also allows you to retrieve an "old" worksheet for editing.

Subcommand menu prompt: Storage Action? Read Write

When you choose "Read," you are going to edit or update an "old" worksheet.

Subcommand menu prompt: Enter input filename

Enter the name of the "old" worksheet, and you can begin input of changes.

When you choose "Write," the new worksheet or table file is saved and written to a file.

Subcommand menu prompt: Write What? Spreadsheet Table

If you choose "Spreadsheet," you are prompted:

> Enter Output Filename

Enter the name of the new worksheet.

If you choose "Table," you are prompted:

> Enter Table Range

Enter the range of columns and rows for your table.

Again, you are prompted:

> Enter Table File Name

Enter the name of the table file.

WIDTH (\W)

This command changes the width of the current worksheet column. Each column has been preset for ten characters. Remember, the maximum column width is 32 characters, and the minimum width is 5 characters. The format for changing the column width is:

\Wx

where x is the number of column characters. For example, to change the column width to 16 characters, type \W16.

Reference Guide

Table 2 is a reference guide to help you quickly locate all the PRO/Spreadsheet commands that you can use:

Table 2
Reference Guide for PRO/Spreadsheet Commands

Command	Command Letter	Action
Auto-evaluate	\ A	Causes automatic evaluation of data
Clear	\ C	Clears worksheet and resets format characteristics
Display	\ D	Displays specific columns and rows
Exit	\ E	Leaves PRO/Spreadsheet and returns to P/OS Main Menu or Application Group Menu
Format	\ F	Adds dollar sign character and changes number of decimal places
Justify	\ J	Aligns values or labels on right or left margin of current column
Print	\ P	Prints worksheet
Repaint	\ R	Repaints screen using normal or widescreen format
Storage	\ S	Reads in an old worksheet, saves a current worksheet, or creates a table file
Width	\ W	Changes width of worksheet columns for normal or widescreen

Glossary

active cell
> The cell indicated by the cell pointer. The contents of this cell are seen on the current status line.

arguments
> Values, placed in parentheses, that refer to a single cell or a range of cells; a function uses arguments when calculating its own value.

cell
> A particular place on a worksheet that is designated by a column letter and a row number. You refer to a cell by its name; for example, B3 and E9 are called cells.

cell pointer
> The highlighted area on the worksheet screen that points to an active cell.

character
> Any symbol that can be displayed on the screen; for example, A, 2, $, +.

columns
> Vertical divisions of the worksheet that are identified with letters.

command
> An instruction that tells PRO/Spreadsheet you want to make changes to the worksheet format, store a current worksheet, retrieve an "old" worksheet, or print a worksheet.

command menu line
> The second message line above your worksheet.

copying

An action that allows a cell value or formula to be replicated in another designated position on the worksheet.

current cell

The cell into which you are presently entering information; similar to "active cell."

designators

Internal references used between cells when assigning values to them.

exponentiation

A function that calculates the power of a number.

filename

The name you give to a worksheet when you store, edit, or print it.

formatting (a screen)

A procedure for customizing screen characteristics, such as justifying column labels left or right, or changing their widths.

formula

An arithmetic shortcut for performing numerical calculations. For example, B1*4 is a formula that calculates (in this case multiplies) the value in cell B1, four times.

function

A built-in mathematical calculation, such as sum or average, that PRO/Spreadsheet carries out on one or more values.

justify

Aligning values or labels on the right or left margin of a column.

label

A heading for a column or row.

message lines

The rows of text, located above a worksheet, that display essential information as you enter data on the worksheet.

range

A reference to a rectangular area of cells on the screen. For example, the range B1:C20 defines the rectangular group of cells in rows 1 through 20 of column B and rows 1 through 20 in column C.

range operator

Indicated by a colon (:), and links different areas of a worksheet by specifying the range of columns and rows.

read

> The process of selecting an "old" worksheet that has been stored, so you can edit it.

rows

> Horizontal divisions of the worksheet that are identified with numbers.

save

> To make a permanent copy of a worksheet in a file directory.

table

> A specific range of columns and rows that is stored in a table file.

target cell

> A cell whose location is designated by the location of the current cell.

value

> A number designated by you, or a number that is the result of a mathematical calculation.

write

> The process of saving a worksheet so that you can retrieve and edit it later on.

worksheet

> The grid of columns and rows, A through Z and rows 1 through 256, that identify a PRO/Spreadsheet worksheet.

Index

Contents

PRO/Graph

INTRODUCTION

This chapter tells you how to use the PRO/Graph application. In addition, it lists the software and any additional equipment that you need to run PRO/Graph on your Professional.

PRO/Graph allows you to create bar graphs, line graphs, and pie charts and tailor them to your needs. You enter information to create new graphs or to modify existing graphs. You can also use PRO/Graph to create graphs from *table files* produced using PRO/DataManager and PRO/Spreadsheet.

> **NOTE:** In this manual, the word "graph" refers to bar graphs, line graphs, and pie charts. The word "chart" refers specifically to pie charts.

PRO/Graph is particularly well-suited for drawing business graphics. It is a two-dimensional graphing package, using an X-axis to represent the horizontal dimension and a Y-axis to represent the vertical dimension.

Unlike scientific and mathematical graphs, however, PRO/Graph does not represent the true values of numbers on the X-axis. Instead, PRO/Graph spaces numbers and text evenly along the X-axis to create a clear presentation of business graphics. The X-axis is used for labels as opposed to actual values, even though the X-axis can contain numbers.

For example, you might create a graph showing sales figures for the years 1979, 1980, 1981, 1982, and 1983. PRO/Graph spaces the years evenly along the X-axis rather than plotting them as numeric values. Similarly, you might create a graph that presents sales figures for each month of the past year. The months would appear as text (Jan., Feb., Mar., etc.) spaced evenly along the X-axis.

> **NOTE:** Users who need a graphics package that plots scientific or mathematical graphs should use PRO/BASIC or refer to the DECDirect catalog or a Digital salesperson for assistance in locating existing applications.

When you use PRO/Graph to create new graphs, you enter the numeric information for your graph on a grid, called the Data Grid. The Data Grid is a table consisting of rows and columns. PRO/Graph normally represents the data contained in rows along the Y-axis of the graph and the data contained in columns along the X-axis of the graph. PRO/Graph then uses the information on the Data Grid to prepare your graph. You can modify the information in Data Grid as necessary.

PRO/Graph also includes several menus that help you set up your graph. For example, using the PRO/Graph menus, you can:

- Choose a bar graph, line graph, or pie chart.
- Define titles, axis labels, and pie segment labels.
- Change patterns and colors for bars, lines, and pie segments.
- Direct PRO/Graph to interpret the data as either *row-by-column* or *column-by-row*.
- Separate a single pie segment from the others for emphasis.
- Choose the grid pattern.
- Determine the way you want to display axes and legends.
- Print your graph on a printer or plotter.

When you have modified the graph to your liking, you can save the graph data and attributes in a special file called a "table file." Table files are files that have a .TAB file type. They can be created by PRO/Graph, PRO/DataManager, or PRO/Spreadsheet.

NOTE: PRO/Graph automatically generates table files. PRO/DataManager and PRO/Spreadsheet generate table files only if you request them. You cannot use PRO/DataManager or PRO/Spreadsheet files to draw graphs with PRO/Graph unless they have .TAB file types. (The chapters on PRO/DataManager and PRO/Spreadsheet describe how to create table files.) In addition, the PRO/DataManager or PRO/Spreadsheet table files must contain numeric information so PRO/Graph can plot a graph.

PREPARING YOUR PROFESSIONAL FOR PRO/GRAPH

Required Software

PRO/Graph is designed to run on version 1.7 of the P/OS software. If your Professional runs on an earlier version of the software, you have to install version 1.7 (or a later version of software) before you can use PRO/Graph.

Recommended Equipment

Depending on your needs, you may require some additional equipment.

PRO/Graph can be run without a printer or plotter, but you will need either a printer or a plotter to obtain copies of your graphs. You can print PRO/Graph graphs on either of the following printers. Each of these printers is prepackaged with installation and operation instructions:

☐ LA50 printer

☐ LA100 printer

You can create graphs that contain up to seven colors with PRO/Graph. If you want to create color graphs, you should have a color monitor (model number VR241) and a color monitor cable (model number BCC03). You also need to install an Extended Bit Map Option (model number VC241) to display color or shades of gray on your monitor. You can run PRO/Graph without this option, however, if you do not need to display colors or shades of gray.

PRO/Graph can use either a 2-pen or a 6-pen plotter. The following plotters work with your Professional:

☐ Hewlett-Packard model 7470A (2-pen)

☐ Hewlett-Packard model 7475A (6-pen)

Setting Up the Plotter

Refer to the documentation that comes with the plotter for general installation instructions.

To connect a plotter to the Professional, you need the following equipment:

☐ Use the Hewlett-Packard Eavesdrop cable (#07470-60090) to connect both a plotter and a printer to your Professional. You also need the Digital printer cable (supplied with your system unit.)

☐ Use the Digital printer cable (BCC05) and the Digital Male-to-Male RS-232 cable (BC22H) to connect only a plotter to your Professional.

To use the plotter with your Professional, you must set the plotter's rocker switches as follows:

☐ Set switches B1 and B4 to ON. (Move the switches so they point to B1 and B4. Switches B2 and B3 should remain OFF.)

☐ The next two switches on the 7475A plotter and the next switch on the 7470A plotter control paper size. Set these switches according to the instructions in the plotter documentation.

☐ If you are connecting both a printer and a plotter, move the Y/D switch to the Y setting. If you are connecting only a plotter, move the Y/D switch to the D setting.

☐ Set the S1 and S2 switches to the OFF position.

Using the Printer and Plotter

If your Professional is connected to both a printer and a plotter, make sure that BOTH the printer and the plotter are plugged in, turned on, and on-line before you print or plot a graph. To resume using the plotter or printer after you have turned the plotter off, turn both the printer and the plotter on again. (If the printer is already turned on, you will have to turn it off and then turn it on again.)

> **CAUTION:** Wait until PRO/Graph finishes printing or plotting your graph before you shut off either the printer or the plotter. Otherwise your data will be lost.

If the plotter will not draw your graph, check the following:

- ☐ Make sure the cables are connected.
- ☐ Check both the plotter and the printer to see if the power is ON.
- ☐ Make sure the rocker switches are set as described above.

INSTALLING PRO/GRAPH

PRO/Graph must be installed on your Professional before you can use it. Refer to the *Professional 300 Series User's Guide for Hard Disk System* for installation instructions.

ON-LINE HELP

When you are not sure what to do, press HELP. Information appears to aid you. You can press HELP from any PRO/Graph menu.

Press HELP in several different situations:

- ☐ First, to display general information about each menu, press HELP while the pointer is resting above the list of menu options. Press RESUME to return to the menu you were using.

- ☐ Second, to display the PRO/Graph Main Help Menu, press HELP from any PRO/Graph menu when the pointer is resting above the list of menu options. When help for that menu is displayed, press NEXT SCREEN. The PRO/Graph Main Help Menu, which allows you to choose from a list of HELP topics, is displayed. Choose the topic that you want explained. After you have displayed this information, press PREV SCREEN to return to the PRO/Graph Main Help Menu, or press RESUME to return to the menu you were using.

- ☐ Third, to display specific information about the options on each menu, simply position the pointer at the option you want and press HELP. Press RESUME to return to your original work.

SPECIAL FUNCTION KEYS

Unless otherwise specified, PRO/Graph uses function keys as described below.

- □ *DO*—You press DO to select options from the PRO/Graph menus. In addition, you can press DO to enter a number or label into a Data Grid *cell*.

- □ *ENTER*—You can press ENTER to enter a number or label into a Data Grid cell.

- □ *EXIT*—When you press EXIT, PRO/Graph redisplays the previous menu. (When you press EXIT from the Entry Menu, the P/OS Main Menu is displayed. When you press EXIT from the PRO/Graph Main Menu, the Exit Menu is displayed.)

- □ *MAIN SCREEN*—When you press MAIN SCREEN, the PRO/Graph Main Menu is redisplayed. (When you press MAIN SCREEN from the Entry Menu, the P/OS Main Menu is displayed.)

- □ *NEXT SCREEN*—Some PRO/Graph menus are displayed on two screens. You press NEXT SCREEN to move from the first screen to the second. In addition, you can use NEXT SCREEN when you are reading the PRO/Graph Main Help Menu. (See the section titled "On-line Help.")

- □ *PREV SCREEN*—For PRO/Graph menus that are displayed on two screens, you press PREV SCREEN to move from the second screen back to the first. In addition, you can use PREV SCREEN when you are reading the On-line Help Menus. (See the section titled "On-line Help.")

- □ *RESUME*—You press RESUME to return to PRO/Graph processing from a Help screen.

PRO/GRAPH MENUS

PRO/Graph is made up of menus that allow you to organize and customize your graph. Figure 1 shows the menu organization.

```
                    ┌──────────────┐
                    │    P/OS      │
                    │  Main Menu   │
                    └──────┬───────┘
                           │
                    ┌──────┴───────┐
                    │    Entry     │
                    │    Menu      │
                    └──────┬───────┘
                  ╱                 ╲
        ┌──────────────┐       ┌──────────────┐
        │    File      │       │    Data      │
        │  Selection   │       │    Grid      │
        │    Menu      │       │              │
        └──────────────┘       └──────────────┘
                  ╲                 ╱
                    ┌──────────────┐
                    │  PRO/Graph   │
                    │  Main Menu   │
                    └──────┬───────┘
```

Edit Menu	Graphic Options Checklist	Design Graph Menu	View Final Copy	Plot Final Copy	Exit Menu
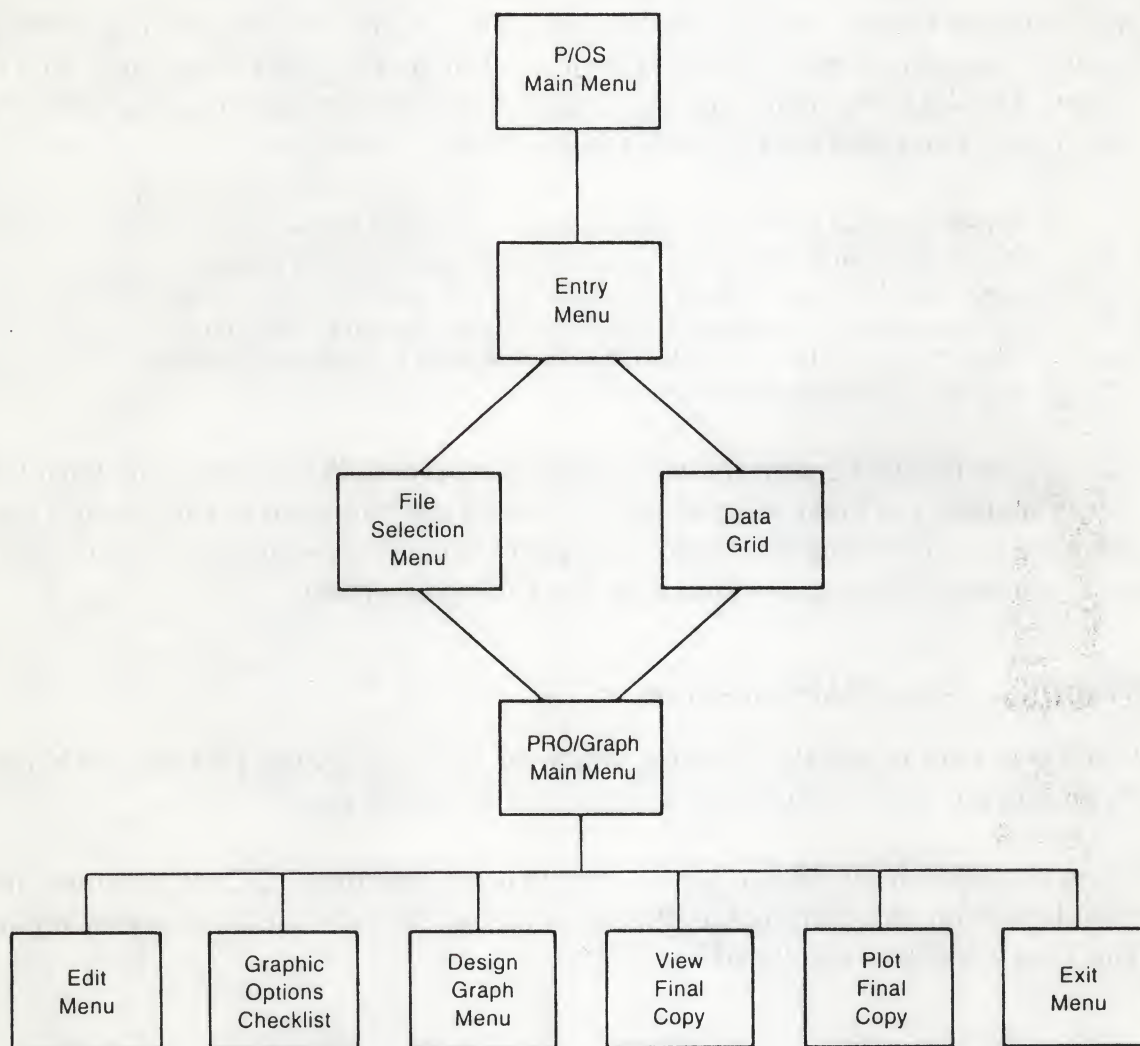
Figure 1
PRO/Graph Menu Organization

PRO/Graph includes two kinds of menus:

☐   Work screen menus

☐   Full screen menus

Work screen menus occupy the left one-third of the screen, while a slightly reduced version of your graph is represented in the right two-thirds of the screen. Because the menu and the graph itself appear simultaneously on the screen, you can refer to the graph to determine your choices.

> **NOTE:** Because PRO/Graph does not draw a full screen representation of your graph on a work screen menu, the graph may appear to be out of proportion. Don't worry about this. PRO/Graph allows you to view the full screen representation of your graph at any time by selecting "View Final Copy" from the PRO/Graph Main Menu. PRO/Graph redraws your graph in proportion, using the whole screen.

Full screen menus occupy the entire monitor screen. When you work with full screen menus, you make a series of choices and then indicate to PRO/Graph that you have finished using the menu. You do not see a representation of your graph until you have finished working with the full screen menu.

STARTING A PRO/GRAPH SESSION

When you want to use PRO/Graph, you must first display the PRO/Graph Entry Menu on your screen. Follow these instructions to do so.

From the P/OS Main Menu, choose PRO/Graph and press **DO**. If you installed PRO/Graph on an additional applications menu, then choose it from that menu. The Entry Menu is displayed.

```
┌─────────────── PRO/Graph Version 1.0 ───────────────┐
│                                                      │
│    Copyright © 1983, Digital Equipment Corporation   │
│                                                      │
│        ->                                            │
│              Create A New Table                      │
│              Use An Existing Table                   │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
└──────────────────────────────────────────────────────┘
  Make a choice and press DO:
```
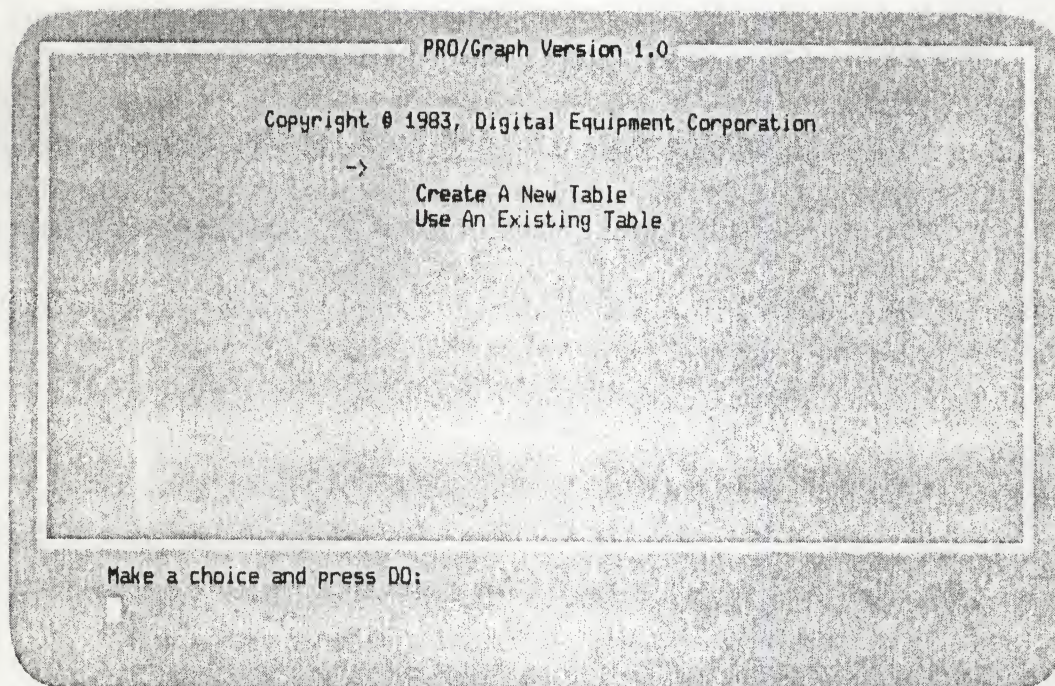
ENTRY MENU

The Entry Menu (above) is the first screen that you see whenever you start using PRO/Graph. It is also the last screen you see when you leave PRO/Graph. In other words, the Entry Menu is displayed when you select PRO/Graph from the P/OS Main Menu (or an additional applications menu) or when you press EXIT from the Exit Menu. (The Exit Menu is described later.)

The Entry Menu is a full screen menu. It lists the following two options.

```
        ┌──────────┐
        │   P/OS   │
        │ Main Menu│
        └────┬─────┘
             │
        ┌────┴─────┐
        │  Entry   │
        │   Menu   │
        └──┬────┬──┘
           │    │
   ┌───────┘    └───────┐
┌──┴──────┐      ┌──────┴──┐
│  File   │      │  Data   │
│Selection│      │  Grid   │
│  Menu   │      │         │
└─────────┘      └─────────┘
```
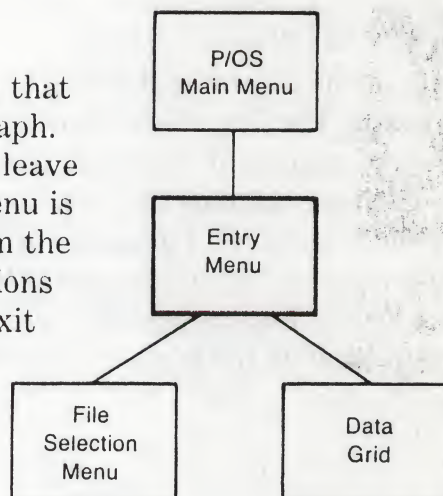
☐ *Create a New Table*—This option automatically creates a new graph file for your graph and displays the Data Grid. You choose this option if you want to enter data for a new graph.

☐ *Use an Existing Table*—This option displays the File Selection Menu, from which you choose a file. You select this option to display and modify a graph data file that already exists in your current directory.

If you press **MAIN SCREEN** or **EXIT** from the Entry Menu, you return to the P/OS Main Menu.

DATA GRID

The Data Grid is displayed when you select "Create a New Table" from the Entry Menu.

> **NOTE:** The Data Grid is also displayed when you select "Data Values" from the Edit Menu. You will learn more about the Edit Menu later in this manual.

The Data Grid is a table for entering or modifying the information on your graph. The grid is full screen, with as many as 9 columns and 20 rows. If you are creating the graph, the Data Grid shows two blank rows and two blank columns. If you are editing an existing grid, only the rows and columns that currently contain information appear. Suppose, for example, that you create a grid that lists the final exam scores for a group of students. The grid might look like the grid at the top of the next page.
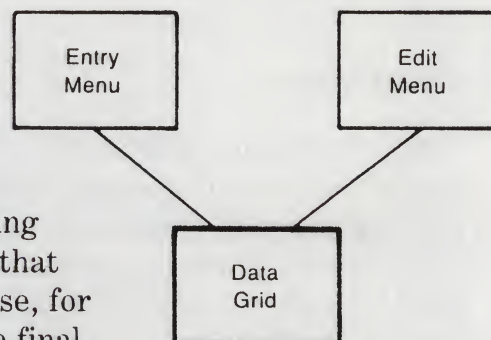
```
                Data Grid -- Press HELP for Help.

  Additional Options available.
        1        2        3        4       5
  1|Student English Math     History Science
  2|Abby     86      98       90      90
  3|Bill     72      62       67      54
  4|Jonatha  82      98       85      90
  5|Ron      34      45       62      60
  6|Sam      54      69       40      28
  7|Vera     91      96       93      96
```

Editing the Grid—The intersection of a row and a column is called a cell. You use the arrow keys to highlight the cell in which you want to enter information. The left and right arrows move you across columns. The up and down arrows move you from row to row. For example, to highlight the cell that is two rows down and five columns to the right, you press the down arrow twice and the right arrow five times, as shown below:

1. It this cell is highlighted: →

2. Press ↓ twice
        and
3. Press → five
   times

to enter data
in this cell

When you have highlighted the cell, you can then begin to add new information or edit existing information.

The arrow keys determine the direction in which the highlight will move when you enter or change information in a cell. Suppose, for example, that you just pressed the left arrow key to highlight a cell.

When you enter or change the information in that cell, the highlight moves one cell to the left.

You can enter either a label or a number into a cell. In addition, you use commands to:

☐ insert rows or columns

☐ remove rows or columns

☐ enter *Edit Mode*

Normally, when you enter or change information in cells, you replace the entire contents of a cell. In other words, you delete the current contents of the cell and enter new information. You can also edit existing information by entering Edit Mode, which is described below.

Entering Labels

To enter a label, highlight the cell you want and then type a double or single quote (" or '). The quote notifies PRO/Graph that you are entering a label instead of a number. The quote is not echoed in the cell, and it will not appear on your graph. Next type the label and press DO, ENTER, or one of the arrow keys. The former label is deleted and the new label appears in the cell. (Only the first seven characters of the label are displayed in the cell on your screen. The entire label, however, appears on your graph.) Note that all labels are entered this way, regardless of whether the label is text or a number (such as the year 1983).

Entering Values

To enter a number into a cell, highlight the cell you want. Then type the number and press DO, ENTER, or one of the arrow keys. The new number appears in the cell you selected.

Edit Mode—You enter Edit Mode by selecting Edit from the *command line.* To do this, first highlight the cell you want to edit. Then press either the ADDTNL OPTIONS key or the backslash (\) key. A command line is displayed at the top of the Data Grid. This command line is described in more detail below. For now, just type E to enter Edit Mode. The entire contents of the highlighted cell are displayed in the editing line at the top of the screen. A cursor appears at the first character position on the editing line.

If you are entering information into this cell for the first time, simply type in the information. As you type the information, you can use the ⊲X̲ key to delete unwanted characters. You can use the right and left arrow keys to reposition the cursor on the line.

While you are in Edit Mode, you can use some of the function keys to modify your graph data, as described below.

- ☐ ← *Arrow*—moves the cursor over one character to the left. If the cursor is resting on the first character, your terminal beeps when you press the left arrow.

- ☐ → *Arrow*—moves the cursor over one character to the right. If the cursor is resting on the position after the last character (or the last position on the screen), your terminal beeps when you press the right arrow.

- ☐ ⊲X̲ *key*—removes the character to the left of the cursor. Characters to the right of the deleted character move over one position to the left.

- ☐ *CANCEL*—turns off Edit Mode without affecting the contents of the current cell.

- ☐ *DO*—replaces the contents of the highlighted cell with what is contained on the editing line and then turns off Edit Mode.

- ☐ *ENTER*—replaces the contents of the highlighted cell with what is contained on the editing line and then turns off Edit Mode.

- ☐ *RETURN*—replaces the contents of the highlighted cell with what is contained on the editing line and then turns off Edit Mode.

Entering Commands

To enter a command, highlight the cell where the command should take effect. Then press either the ADDTNL OPTIONS key or the backslash (\ ) key. A line of three commands (Edit, Insert, and Remove) is displayed at the top of the grid. Type the first letter of the command you want.

- *Edit (E)*—enters Edit Mode (described above). When you enter this command, the entire contents of the highlighted cell appear on the editing line at the top of the screen. (If the cell is empty, only the cursor appears on the editing line.)

- *Insert (I)*—lets you insert a column or row. After you type I, PRO/Graph asks you whether you want to insert a column or a row:

  Insert? Column Row

  You must enter C or R.

- *Column (C)*—specifies that you want to insert a new column. After you type this command, PRO/Graph asks you whether you want to insert the column after or before the highlighted cell:

  Insert Column? After Before

  You must enter A or B.

- *Row (R)*—specifies that you want to insert a new row. After you type this command, PRO/Graph asks you whether you want to insert the row after or before the highlighted cell:

  Insert Row? After Before

  You must enter A or B.

- *Remove (R)*—Lets you remove a row or column. After you type R, PRO/Graph asks you whether you want to remove a column or a row:

  Remove? Column Row

  You must enter C or R.

You can see that the Insert and Remove commands require additional commands. You might find it helpful to think of the Insert and Remove commands as a series of two or three letters, as listed below:

- ☐ ICA (Insert Column After)
- ☐ ICB (Insert Column Before)
- ☐ IRA (Insert Row After)
- ☐ IRB (Insert Row Before)
- ☐ RC (Remove Column)
- ☐ RR (Remove Row)

Removing and Inserting Columns and Rows

The Data Grid consists of information in the table file for your graph. Table files, however, can have an infinite number of rows and columns. Some table files, such as files created using PRO/DataManager, have many more than 9 columns and 20 rows. When this is the case, PRO/Graph displays the left-most 9 columns and the top 20 rows in the table file. These rows and columns represent the data that PRO/Graph uses to draw the graph. PRO/Graph creates a graph using only the columns and rows that appear on your monitor. Any other information in the table file is retained in the Professional's memory, but is not shown on the screen, and does not appear on the graph that PRO/Graph draws.

Figure 2 shows the relationship between the Data Grid and a table file. In this example, the table file consists of 12 columns and 23 rows. The shaded area represents the information that would appear on your screen, which is also the information that PRO/Graph uses to draw your graph.

Figure 2
Relationship Between Data Grid and Table File

When you are inserting and removing columns, it will be helpful to keep a few things in mind.

☐   PRO/Graph plots only the information displayed on the Data Grid.

☐   When you remove a column or a row, PRO/Graph then displays the first column or row that was previously not displayed. In Figure 2, for example, if you removed column 5, PRO/Graph would fill the space left by column 5 with the remaining columns. Column 10 would become column 9, and would therefore be displayed on the Data Grid.

☐   When you insert a column or a row, PRO/Graph removes the bottom row or the right-most column from the Data Grid (but not from the table file). In Figure 2, for example, if you inserted a row before row 20, the new row would become row 20, and the former row 20 would become row 21 and would no longer be displayed on the Data Grid.

☐ When you remove a row or column, you remove the entire row or column, not merely what is displayed on the Data Grid. If, for example, you remove row 4 from Figure 2, the entire row is removed, including all the entries that occur in columns 10, 11, and 12.

☐ When you insert a row or column, PRO/Graph inserts a space for each entry in that row or column, even if you do not fill the space. For example, if you insert a row after row 10 in Figure 2, you would enter data for columns 1 through 9, but you might not enter data for the remaining columns. PRO/Graph, however, leaves spaces for each column remaining in the row.

Some Tips About Labels—You enter text into cells on the Data Grid so that the text appears as labels on your finished graph. Typically labels are entered into the cells in row 1 and column 1 of the Data Grid. (You are not restricted to entering labels in row 1 and column 1. Later in this manual you will learn how to tell PRO/Graph to use a different row or column for graph labels.)

When you enter labels, you must plan their sizes. If you enter labels that are too long, they will overlap on bar and line graphs, and they will be cut off on pie charts. Keep in mind the following points when you are entering labels for your graph.

1. The more labels along the X-axis of your graph, the shorter your label should be.

2. Each pie chart label can contain a maximum of 19 characters. If you enter a pie chart label that contains more than 19 characters, some of the characters are cut off.

3. If two labels on a graph overlap, PRO/Graph places the second label below the others on the graph so that the characters do not overlap.

Some Tips About Numbers—Cells can contain any of the following kinds of numbers:

☐ positive and negative whole numbers and zero

☐ decimal numbers (such as 1.2, 34.756, 2741.23)

☐ numbers expressed in scientific notation (any number raised to a power of 10)

You must start each number entry with a digit, a decimal point, or a minus sign.

NOTE: When you are entering numbers into the Data Grid, you might find it easier to use the auxiliary keypad at the right of your keyboard. If you use the auxiliary keypad, the numbers and function keys are all within easy reach.

You enter numbers expressed in scientific notation into cells by using the letter E to express exponentiation. You can enter numbers that contain up to 16 digits. The exponent can be a number between -38 and $+38$. Table 1 shows how to express numbers in scientific notation.

Table 1
Using Scientific Notation

Number	Scientific Notation	You Enter
0.001234	1.234×10^{-3}	1.234E-3
32340	3.234×10^{4}	3.234E4
244.65	2.4465×10^{2}	2.4465E2

Each cell can display on the screen a maximum of seven digits, although you can actually enter a number that is larger than seven digits. PRO/Graph calculates your graph with whatever number you enter into the cell.

FILE SELECTION MENU

```
                    File Selection Menu

        Which table file do you want to use?
        Current directory is USERFILES on Volume BIGVOLUME
             Name          Type      Version
        ->
                 GRADES     .TAB         1
                 INCOME     .TAB         1




                               Additional Options available



                          Select up to    1 items
                              (   0 chosen )
```
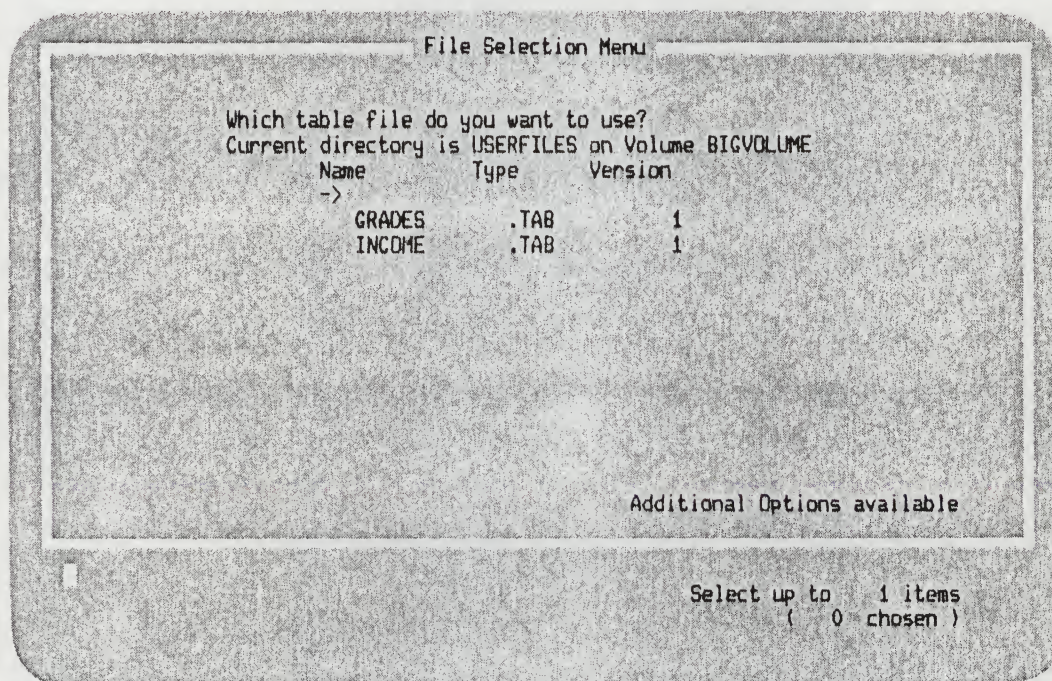
The File Selection Menu is displayed when you choose "Use an Existing Table" from the Entry Menu. It has a list of the most recent version of each file in your current directory. It is a full screen menu. To choose a file, move the pointer to the name of the file you want, and press DO. PRO/Graph then displays the PRO/Graph Main Menu.

When you are working with PRO/Graph, only table files (files that have a file type of .TAB) are listed on the File Selection Menu.

Remember that PRO/Graph automatically generates table files. PRO/DataManager and PRO/Spreadsheet generate table files only if you request them. You cannot use PRO/DataManager or PRO/Spreadsheet files unless they have .TAB file types. (The chapters on PRO/DataManager and PRO/Spreadsheet describe how to create table files.) In addition, the PRO/DataManager or PRO/Spreadsheet table files must contain numeric information so that PRO/Graph can plot a graph.

From the File Selection Menu, you can display the Additional Options Menu by pressing the ADDTNL OPTIONS key. The Additional Options Menu and each of the selections available from it are described in more detail in the *Professional 300 Series User's Guide for Hard Disk System*.

Entry
Menu

File
Selection
Menu
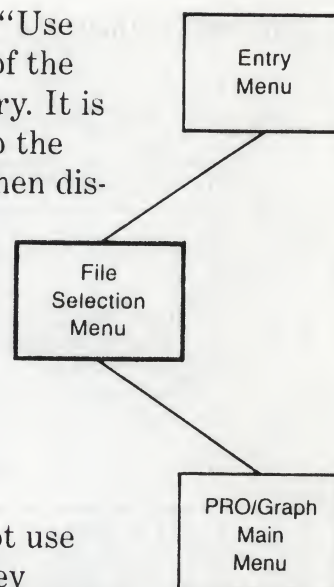
PRO/Graph
Main
Menu

THE PRO/GRAPH MAIN MENU
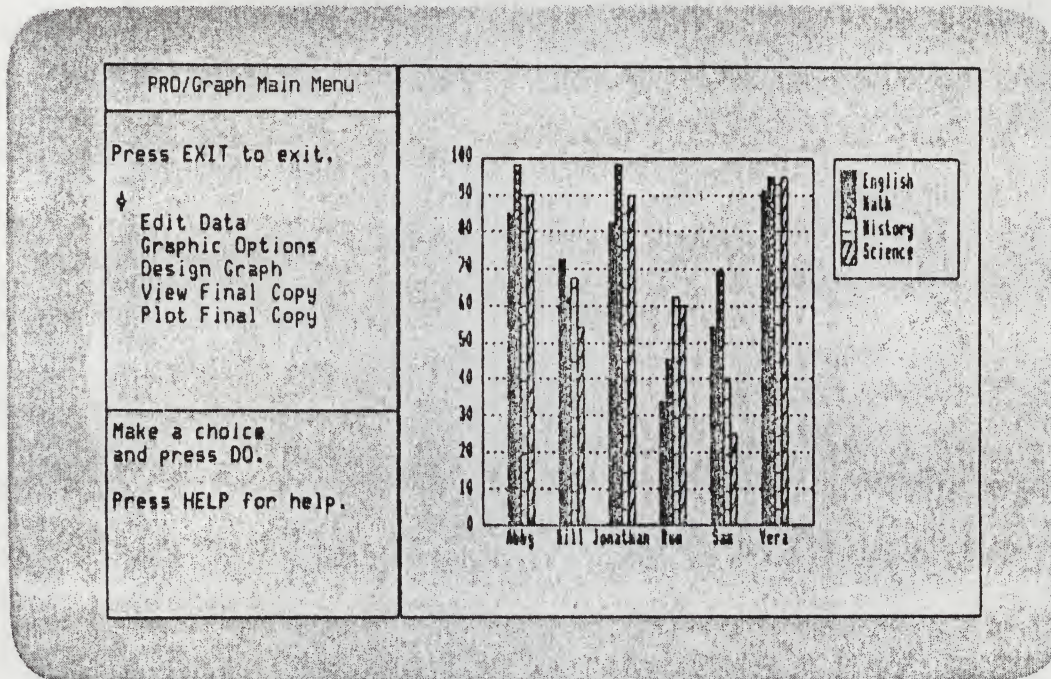
The PRO/Graph Main Menu is displayed in one of two ways:

1.   After you create a new graph and press **EXIT** from the Data Grid.

2.   Or, when you choose a file from the File Selection Menu.
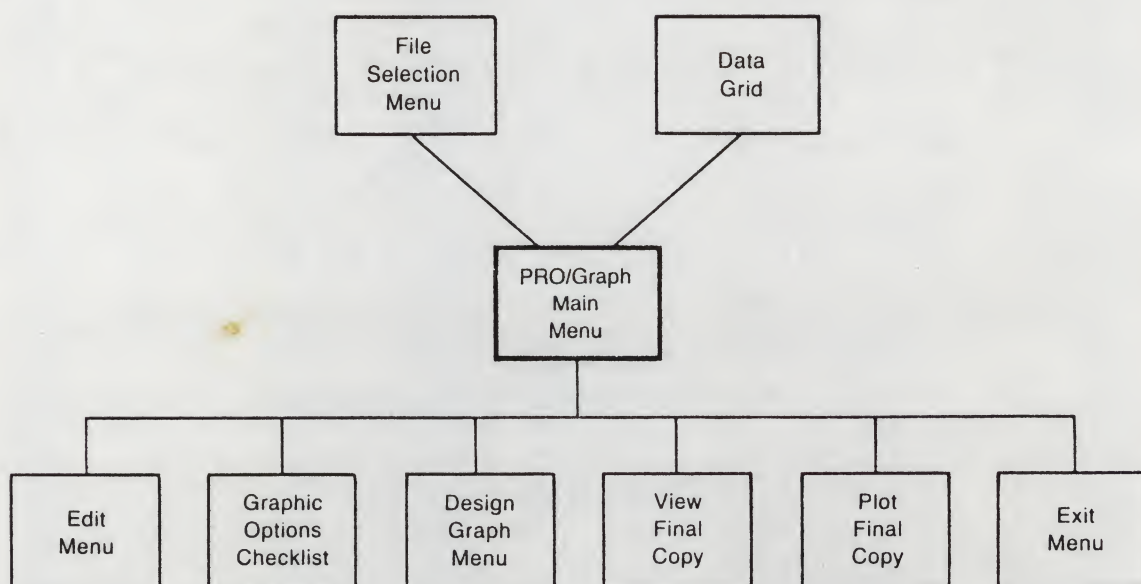
When you reach the PRO/Graph Main Menu, you are already working with a current graph. Either you have created a new graph data file, or you have selected an existing graph data file.

The PRO/Graph Main Menu is a work screen menu. Just before PRO/Graph displays the PRO/Graph Main Menu, it draws, on the right-hand side of the screen, a picture of your graph as it currently exists. PRO/Graph then displays the PRO/Graph Main Menu on the left side of the screen.

Depending on what you want to do with your graph, choose that option from the PRO/Graph Main Menu. The PRO/Graph Main Menu includes five options.

☐ *Edit Data*—displays the Edit Menu. You choose this option when you want to edit either the numerical information or the descriptive text on your graph.

☐ *Graphic Options*—presents a checklist of graphic information. You use this option to modify some of the aspects of your graph.

☐ *Design Graph*—displays the Design Graph Menu. You select this option to set up the layout of your graph.

☐ *View Final Copy*—displays a full screen representation of your graph. You choose this option to obtain a printed copy of your graph or to check to see how your graph looks.

☐ *Plot Final Copy*—plots the graph on a plotter. You select this option if you want to draw your graph on a plotter. Make sure you read the section titled "Preparing Your Professional for PRO/Graph" before you select this option.

If you press EXIT from this menu, PRO/Graph displays the Exit Menu.

EDIT MENU
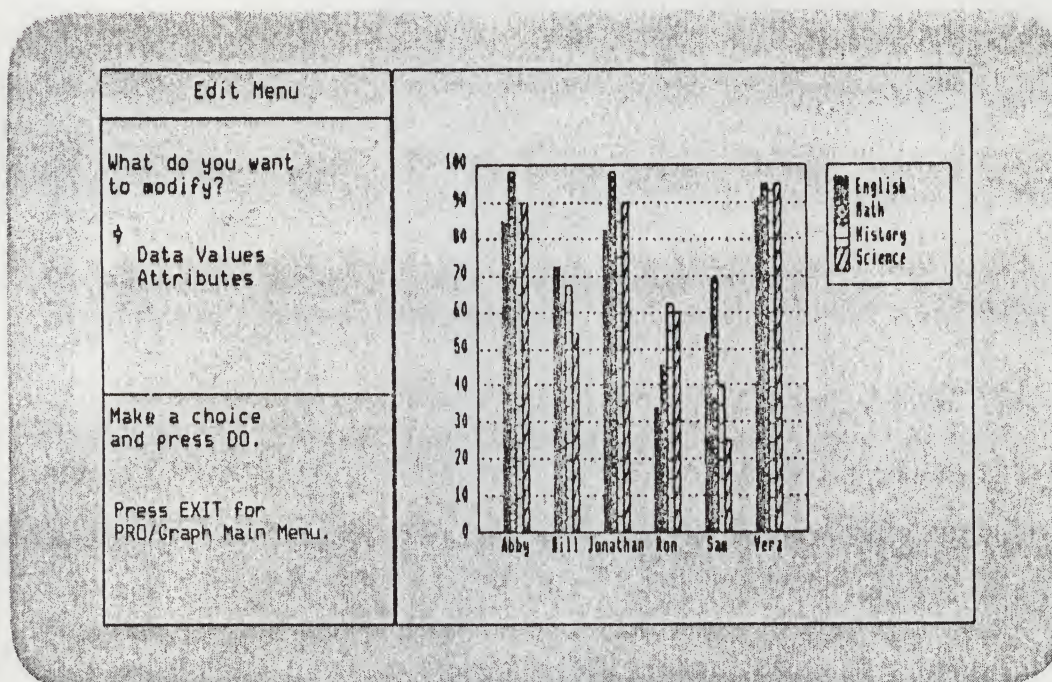
The Edit Menu is displayed when you select "Edit Data" from the PRO/Graph Main Menu. You use the Edit Menu to enter data values or attributes for a new graph or to change data values or attributes for an existing graph. It is a work screen menu. The Edit Menu has the following two options:

☐ *Data Values*—When you select the "Data Values" option, the Data Grid is displayed. You use the Data Grid to enter or modify the data for your graph. (The Data Grid is discussed earlier in this chapter.)

☐ *Attributes*—When you select the "Attributes" option, the Data Attributes Checklist is displayed. You choose the "Attributes" option to use the Data Attributes Checklist to enter or modify the descriptive text on the graph (such as labels) as well as the Y-axis high and low values.
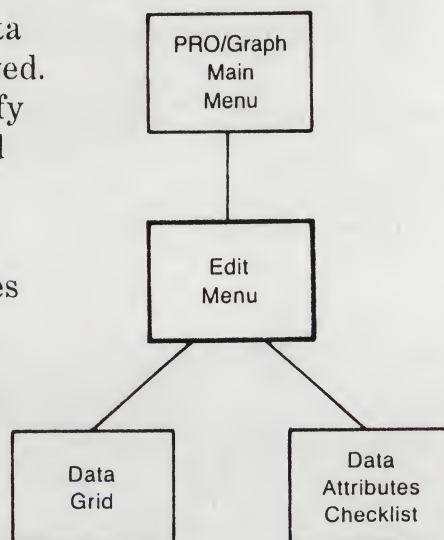
DATA ATTRIBUTES CHECKLIST

```
┌─────────────────────────────────────────────────────────────┐
│                 Data Attributes Checklist                   │
├─────────────────────────────────────────────────────────────┤
│ Graph Title:                                                │
│ ◊ _On                                                       │
│   ✓Off                                                      │
│                                                             │
│ Graph Subtitle:                                             │
│   _On                                                       │
│   ✓Off                                                      │
│                                                             │
│ Key Title: (Bar & Line Graphs Only)                         │
│   _On                                                       │
│   ✓Off                                                      │
│                                                             │
├─────────────────────────────────────────────────────────────┤
│          Press NEXT SCREEN for more attributes.             │
│                                                             │
│             Press EXIT for Edit Menu.                       │
│                                                             │
│       Press MAIN SCREEN for PRO/Graph Main Menu.            │
└─────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────┐
│                  Data Attributes (Cont.)                    │
├─────────────────────────────────────────────────────────────┤
│ X Axis Title: (Bar & Line Graphs Only)                      │
│ ◊ _On                                                       │
│   ✓Off                                                      │
│ X Axis Subtitle: (Bar & Line Graphs Only)                   │
│   _On                                                       │
│   ✓Off                                                      │
│                                                             │
│ Y Axis Title: (Bar & Line Graphs Only)                      │
│   _On                                                       │
│   ✓Off                                                      │
│ Y Axis Subtitle: (Bar & Line Graphs Only)                   │
│   _On                                                       │
│   ✓Off                                                      │
│                                                             │
│ Y Axis High Value: (Bar & Line Graphs Only)                 │
│   ✓Automatic                         Press EXIT for Edit Menu.│
│   _Other                                                    │
│ Y Axis Low Value: (Bar & Line Graphs Only)                  │
│   ✓Automatic                         Press MAIN SCREEN for   │
│   _Other                             PRO/Graph Main Menu.    │
└─────────────────────────────────────────────────────────────┘
```

The Data Attributes Checklist is displayed when you select "Attributes" from the Edit Menu. It is a full screen menu that lets you enter or modify text that describes the data, and lets you choose the Y-axis high and low values. (There are no high or low values for the X-axis because PRO/Graph treats values that appear along the X-axis strictly as labels.)
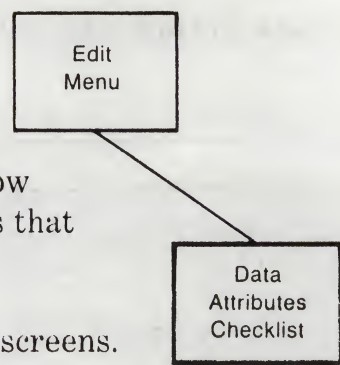
The Data Attributes Checklist is displayed on two full screens. You move from one screen to the other by pressing the **NEXT SCREEN** and **PREV SCREEN** keys.

Each item on the checklist has two attributes. A checkmark tells which attribute has been chosen for any given item on the checklist. For each title, you can choose to turn the title On or Off. The On selection causes the title to appear on your graph. The Off selection causes the title not to appear on your graph. For the Y-axis high and low values, you can select Automatic or Other. The Automatic selection causes PRO/Graph to calculate the value for you. The Other selection allows you to specify the value that you want.

The first time that you display the Data Attributes Checklist, you will notice that each item on the checklist has one attribute that has been selected (a checkmark appears beside it). These are called *defaults*. Generally speaking, a default is any information that PRO/Graph assumes as input if you do not explicitly provide information. On the Data Attributes Checklist, the defaults are settings that PRO/Graph automatically chooses to set up your graph. You need to use the Data Attributes Checklist only if you prefer different settings from the defaults.

You can easily change the defaults to tailor your graph. PRO/Graph then saves and uses the settings that you select from the Data Attributes Checklist. The next time you display the Data Attributes Checklist for this graph, the selections you made (rather than the PRO/Graph defaults) contain check marks in the boxes next to them.

To select an option on the checklist, you move the pointer to the option that you want and press DO. A check mark appears in the box beside the option. If you do not have to enter or change a title associated with the option, simply move the pointer to the next option you want to select and press DO.

If you have selected an option that requires you to enter or change a title, simply type your title. If a title already exists on the editing line, PRO/Graph erases that title when you begin to type. You can use the ⟨X⟩ key to delete characters. When you finish entering information, press the down arrow key. The pointer moves to the next option.

When you have set the attributes for your graph, press EXIT to save the attributes and go to the PRO/Graph Main Menu. Press CANCEL if you want to cancel the changes you made to the checklist.

The first two attributes on the checklist (Screen 1) apply to all graphs, and the others apply only to bar and line graphs. You can select settings for any attribute, no matter what kind of graph you are creating. PRO/Graph draws your graph according to the attributes that apply and ignores the others.

For example, if, when you use the Data Attributes Checklist, you make some selections that apply to bar and line graphs and you then instruct PRO/Graph to draw a pie chart, PRO/Graph draws the pie chart according to the settings on the checklist that have to do only with pie charts. The settings that have to do with bar and line graphs are saved, however, in case you decide to draw a bar or line graph too. The checklist contains the following items:

☐ *Graph Title (all graphs)*—You can enter a title that is up to 60 characters long. When you select the On setting, the graph title is displayed on your graph. When you select the Off setting, the graph is displayed without the title. The default is Off.

☐ *Graph Subtitle (all graphs)*—You can enter a subtitle that is up to 60 characters long. When you select the On setting, the graph subtitle is displayed on your graph. When you select the Off setting, the graph is displayed without the subtitle. The default is Off.

☐ *Key Title (Bar and Line Graphs)*—The key is a small box in the upper right-hand corner of your graph that presents a definition of each bar or line. When you select the On setting, the key title is displayed on your graph. When you select the Off setting, the graph is displayed without the key title. The default is Off.

☐ *X-Axis Title (Bar and Line Graphs)*—You can enter an X-axis title that is up to 60 characters long. When you select the On setting, the title is displayed on your graph. When you select the Off setting, the graph is displayed without the title. The default is Off.

☐ *X-Axis Subtitle (Bar and Line Graphs)*—You can enter an X-axis subtitle that is up to 60 characters long. When you select the On setting, the title is displayed on your graph. When you select the Off setting, the graph is displayed without the title. The default is Off.

☐ *Y-Axis Title (Bar and Line Graphs)*—You can enter a Y-axis title that is up to 60 characters long. When you select the On setting, the title is displayed on your graph. When you select the Off setting, the graph is displayed without the title. The default is Off.

☐ *Y-Axis Subtitle (Bar and Line Graphs)*—You can enter a Y-axis subtitle that is up to 60 characters long. When you select the On setting, the title is displayed on your graph. When you select the Off setting, the graph is displayed without the title. The default is Off.

☐ *Y-Axis High Value (Bar and Line Graphs)*—The Y-axis high value is the highest value that appears on the Y-axis. PRO/Graph automatically calculates this value based on the numeric information that is plotted along the Y-axis. You can change the Y-axis high value by selecting the Other setting and entering the high value that you want. The default is Automatic.

☐ *Y-Axis Low Value (Bar and Line Graphs)*—The Y-axis low value is the lowest value that appears on the Y-axis. PRO/Graph automatically calculates this value based on the numeric information that is plotted along the Y-axis. You can change the Y-axis low value by selecting the Other setting and entering the low value that you want. The default is Automatic.

GRAPHIC OPTIONS CHECKLIST

The Graphic Options Checklist is displayed when you select "Graphic Options" from the PRO/Graph Main Menu. You use the checklist to modify certain aspects of your graph. It is a work screen menu that covers two screens. To move from the first screen to the second screen, press NEXT SCREEN. To move from the second screen back to the first screen, press PREV SCREEN. Each item on the checklist has two options. PRO/Graph selects a default for each option. You use the Graphic Options Checklist to change the settings to tailor your graph.

```
┌─────────────┐
│  PRO/Graph  │
│    Main     │
│    Menu     │
└─────────────┘
       │
       │
┌─────────────┐
│   Graphic   │
│   Options   │
│  Checklist  │
└─────────────┘
```

First Screen
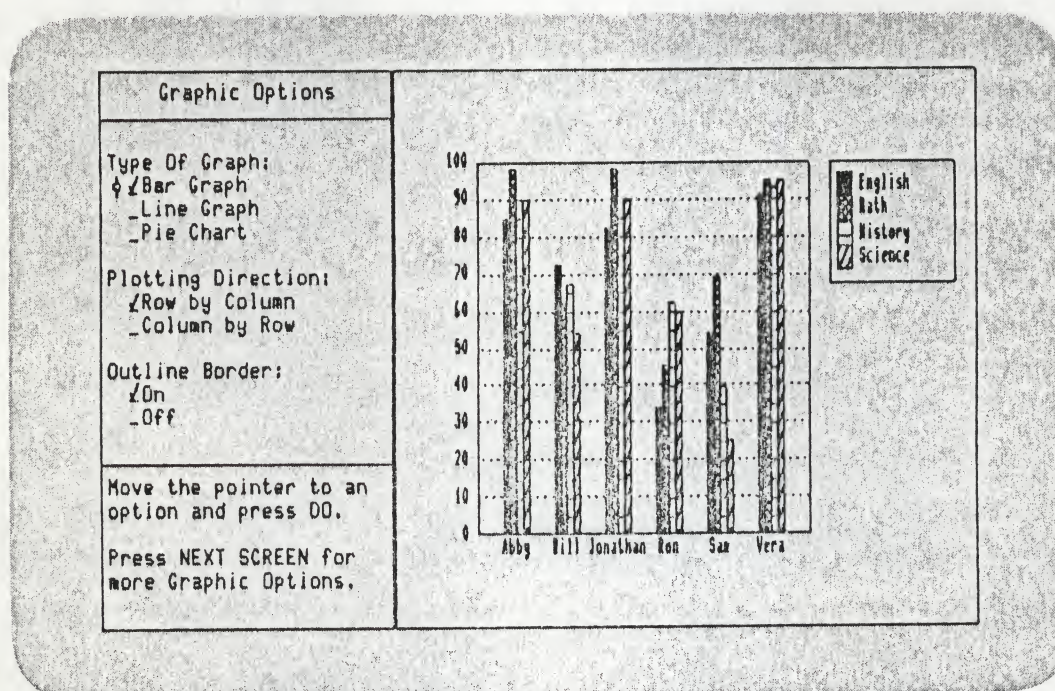
☐ *Type of Graph (all graphs)*—You can tell PRO/Graph to draw a bar graph, line graph, or pie chart. The default is bar graph.

☐ *Plotting Direction (all graphs)*—You can tell PRO/Graph to plot the data in one of two directions. The default is row by column.

Row by Column—PRO/Graph calculates row by column the data as it appears on the Data Grid. The items in a specified column (the default is column 1) of the Data Grid appear along the X-axis of bar and line graphs. These items are also the pie chart labels. Values in the rows beside the selected column are plotted to make your graph. The items in a specified row (the default is row 1) of the Data Grid appear in the key of bar and line graphs. These items are also the items from which you can choose the data to be represented by a pie chart.

The example below shows the values that were entered for the student exam scores plotted in a column-by-row format, with the Data Grid and resulting bar graph. The items in column 1 of the Data Grid (the students' names) appear along the X-axis. The values entered in the row beside each student's name on the Data Grid are plotted to make the graph. The course names in row 1 of the Data Grid appear in the key.

```
                Data Grid -- Press HELP for Help.

      Additional Options available.

         1        2       3        4        5
     1|Student English Math     History Science
     2|Abby     85      98      90       90
     3|Bill     72      62      67       54
     4|Jonatha  82      98      85       90
     5|Ron      34      45      62       60
     6|Sam      54      69      40       25
     7|Vera     91      95      93       95
```

Student Exam Scores
(Plotted Row by Column)
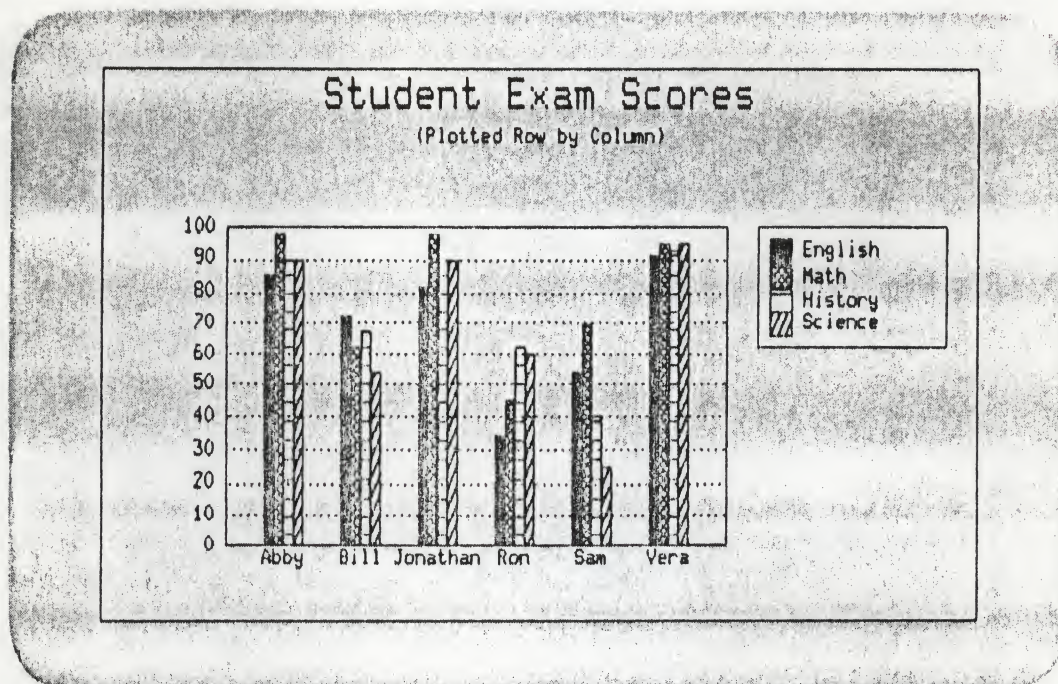
Column by Row—PRO/Graph calculates column by row the data as it appears on the Data Grid. Items in a specified row (the default is row 1) of the Data Grid appear along the X-axis of bar and line graphs. These items are also the pie chart labels. Values in the columns underneath the selected row are plotted to make your graph. Items in a specified column (the default is column 1) of the Data Grid appear in the key of bar and line graphs. They are also the items from which you can choose the data to be represented by a pie chart.

The example below shows the values that were entered for the student exam scores plotted in a column-by-row format, with the Data Grid and resulting bar graph. The items in row 1 of the Data Grid (the name of each course) appear along the X-axis. The values entered in the column underneath each course name on the Data Grid are plotted to make the graph. The student names in column 1 of the Data Grid appear in the key.

Data Grid -- Press HELP for Help.

Additional Options available.

```
        1        2      3       4       5
1|Student English Math   History Science
2|Abby    85      98     90      90
3|Bill    72      62     67      54
4|Jonatha 82      98     85      90
5|Ron     34      45     62      60
6|Sam     54      69     40      25
7|Vera    91      95     93      95
```

Student Exam Scores

(Plotted Column by Row)

Legend:
- Abby
- Bill
- Jonathan
- Ron
- Sam
- Vera
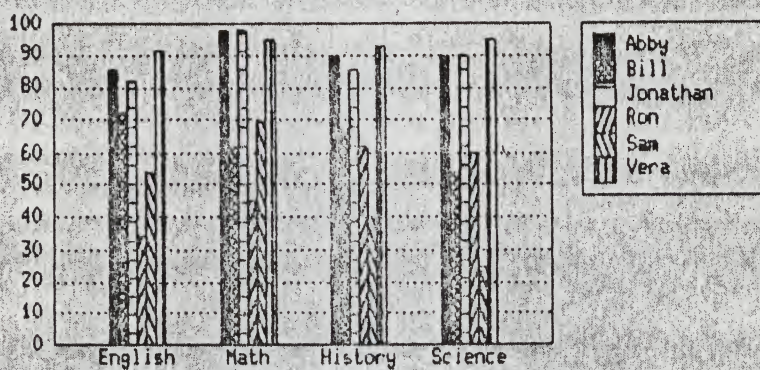
□ *Outline Border (all graphs)*—PRO/Graph can supply you with a border that surrounds and sets off your graph. You can choose to turn the border On or Off. The default is On.

From this first screen of the Graphic Options Checklist, you can press **NEXT SCREEN** to display the second screen of the checklist. You can press **CANCEL** to cancel any changes you have made. **EXIT** and **MAIN SCREEN** both bring you to the PRO/Graph Main Menu.

Second Screen
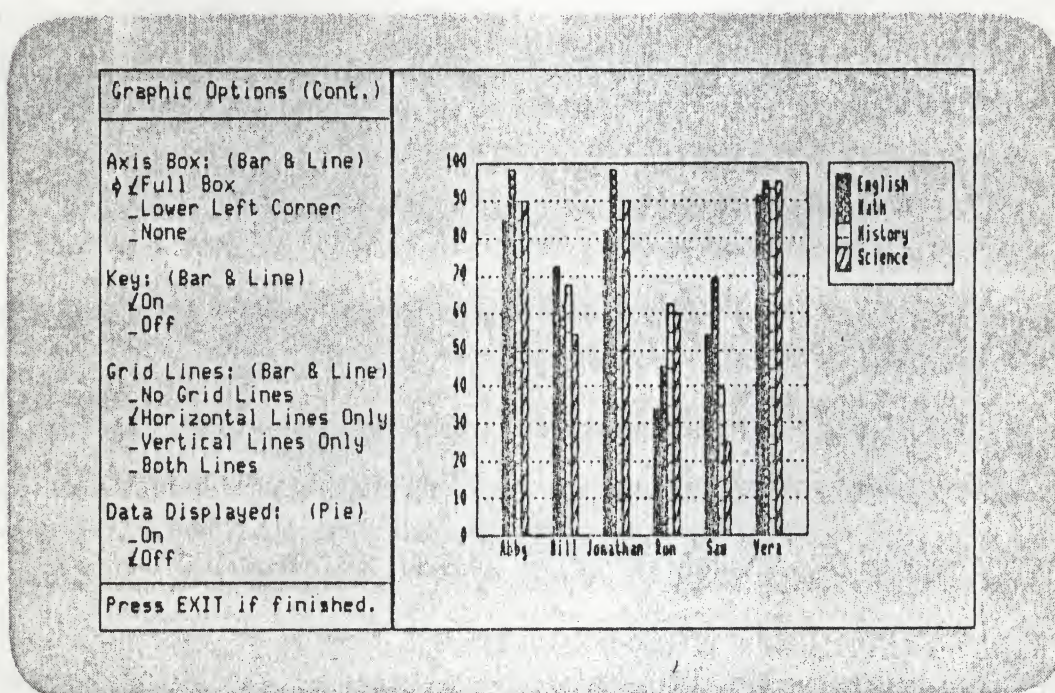
The options on the second screen apply to specific types of graphs, which are listed in parentheses beside the option name. You can select settings for any attribute, no matter what kind of graph you are creating. PRO/Graph draws your graph according to the attributes that apply and ignores the others.

For example, if you make some selections that apply to bar and line graphs and you then instruct PRO/Graph to draw a pie chart, PRO/Graph draws the pie chart according to the settings on the checklist that have to do with pie charts only. The settings that have to do with bar and line graphs are saved, however, in case you decide to draw a bar or line graph too.

□ *Axis Box (Bar and Line Graphs only)*—You can set the axis box so that it appears in one of three ways. The default is Full Box.

Full Box—PRO/Graph draws a line to represent the X-axis and Y-axis, and using those two lines, it fills in a complete box.

Lower Left Corner—PRO/Graph draws lines to represent the X-axis and the Y-axis only.

None—PRO/Graph does not draw a line to represent either the X-axis or the Y-axis.

□ *Key (Bar and Line Graphs only)*—PRO/Graph sets up a key for your graph. You can choose to have the key On or Off. The default is On.

□ *Grid Lines (Bar and Line Graphs only)*—PRO/Graph draws a dotted line to represent the grid for your graph. You can adjust the way the grid appears in one of four ways. The default is Horizontal Lines Only.

No Grid Lines—PRO/Graph draws your graph with no lines to represent the grid.

Horizontal Lines Only—PRO/Graph draws only horizontal grid lines.

Vertical Lines Only—PRO/Graph draws only vertical grid lines.

Both Lines—PRO/Graph draws both horizontal and vertical grid lines.

□ *Data Displayed (Pie Charts only)*—PRO/Graph can display your pie chart with data values underneath each slice label. You can choose to turn the data display On or Off. The default is Off.

From this second screen of the Graphic Options Checklist, you can press **PREV SCREEN** to redisplay the first screen of the checklist. You can press **CANCEL** to cancel any changes you have made. **EXIT** and **MAIN SCREEN** bring you to the PRO/Graph Main Menu.

DESIGN GRAPH MENU

```
┌─────────────────────────────┐
│ ▐ Design Graph Menu          │
│                              │
│ What do you want to          │
│ change?                      │
│                              │
│ ◊                            │
│    Data Relationships        │
│    Patterns & Colors         │
│                              │
│                              │
│ Make a choice                │
│ and press DO.                │
│                              │
│ Press EXIT for               │
│ PRO/Graph Main Menu.         │
└─────────────────────────────┘
```
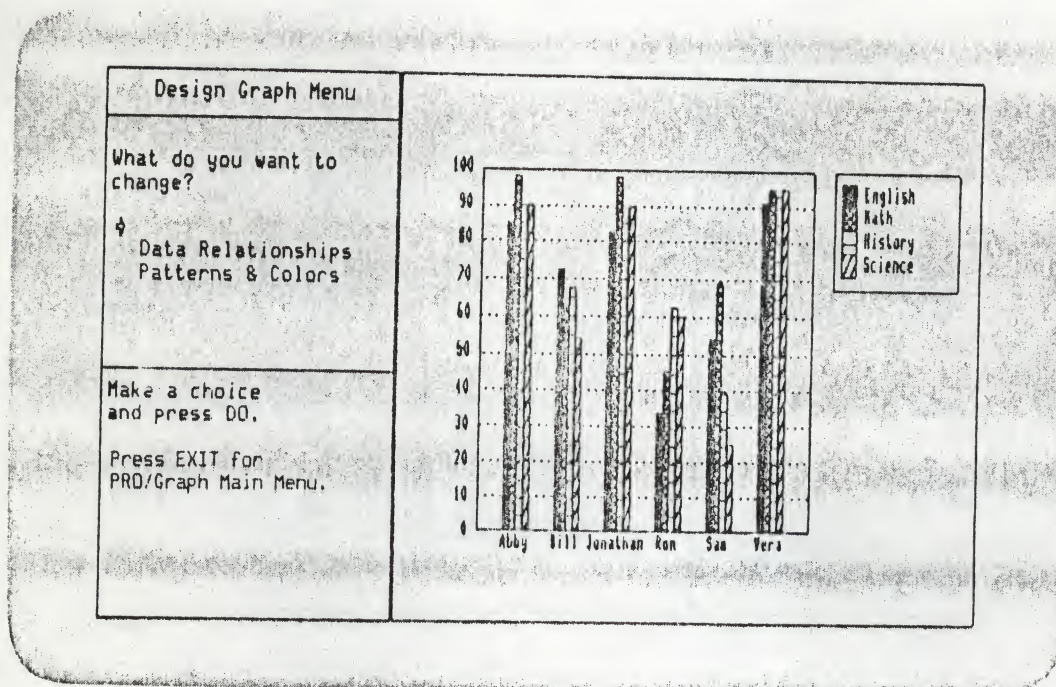
When you select "Design Graph" from the PRO/Graph Main Menu, the Design Graph Menu is displayed. You use the Design Graph Menu to set up the layout of your graph. It is a work screen menu. According to the way that you entered information on the Data Grid, PRO/Graph automatically makes default choices for the graph layout. You are not obligated to accept the PRO/Graph defaults. You can use the Design Graph Menu to customize your graph. The menu contains two choices:

☐ *Data Relationships*—displays the Data Relationships Menu.

☐ *Patterns & Colors*—displays the Change Pattern Menu.

DATA RELATIONSHIPS MENU


```
Data Relationships

What relationship do
you want to change?

◊
   X Axis/Pie Labels
   Key Labels
   Pie Data
   Segment to Separate

Make a choice
and press DO.

Press EXIT for
Design Graph Menu.

Press MAIN SCREEN for
PRO/Graph Main Menu.
```
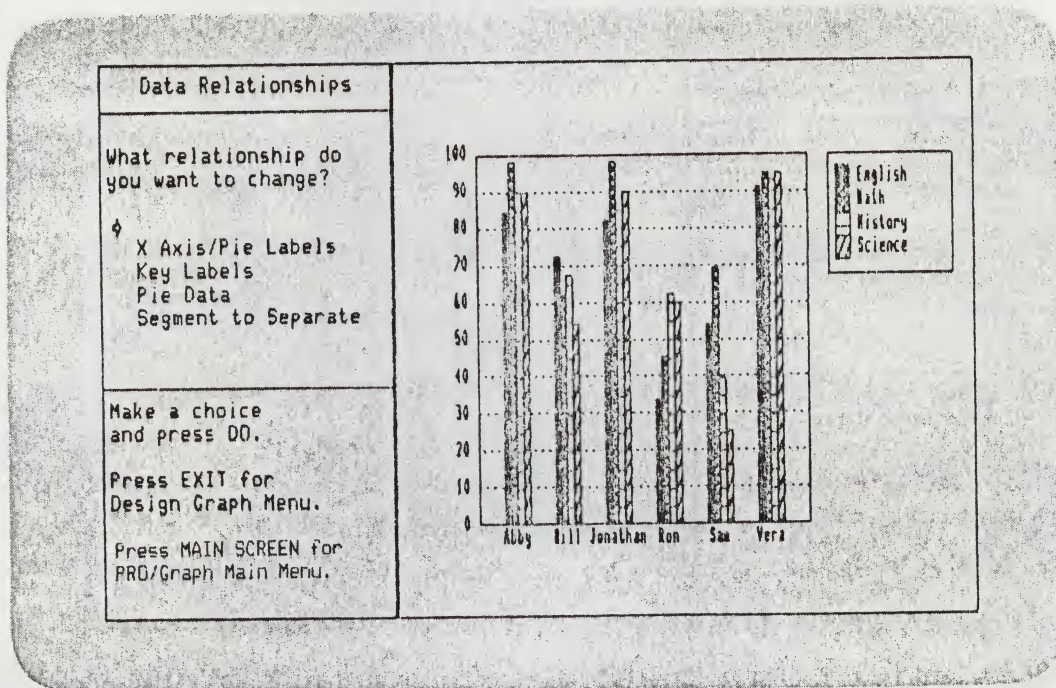
When you choose "Data Relationships" from the Design Graph Menu, the Data Relationships Menu is displayed. The Data Relationships Menu allows you to choose the way your data appears on the graph. It is a work screen menu. To select any of the options from the Data Relationships Menu, move the pointer to the option you want, and press DO. This menu contains four choices.

- ☐ X-axis/Pie Labels
- ☐ Key Labels
- ☐ Pie Data
- ☐ Segment to Separate
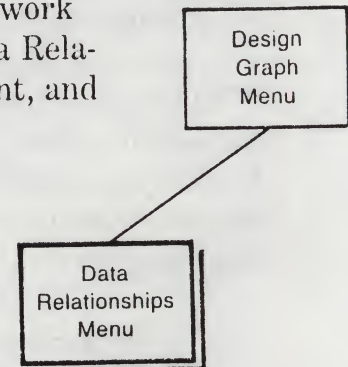
When you press DO, the screen is repainted with a grid that contains the information that you entered on the Data Grid. Each row and column is numbered. When the grid is first displayed, a message naming your current selection appears at the top of the screen. (The first time you display the screen for your current graph, the PRO/Graph defaults are displayed.)

To change the current selection, enter the number of the column or row that you want, and press DO. The row or column you select represents the data for the option that you chose from the Data Relationships Menu. When you press DO, the Design Graph Menu reappears.

> **NOTE:** The default that PRO/Graph chooses depends on whether you display your graph in row-by-column format or column-by-row format. You use the Graphic Options Checklist to choose the format in which you want the graph to appear. See the section on the Graphic Options Checklist for a more detailed description of each format. The example below assumes that the graph is set up in row-by-column format.

Recall, for example, the graph that shows final exam scores for a group of students. The Data Grid looked like this:

```
                  Data Grid -- Press HELP for Help.

     Additional Options available.

          1        2       3        4        5
     1|Student English Math     History  Science
     2|Abby     85      98      90       90
     3|Bill     72      62      67       54
     4|Jonatha  82      98      85       90
     5|Ron      34      45      62       60
     6|Sam      54      69      40       25
     7|Vera     91      95      93       95
```

Assuming that you have directed PRO/Graph to draw a pie chart, but you haven't changed any other defaults, the graph would look like this:
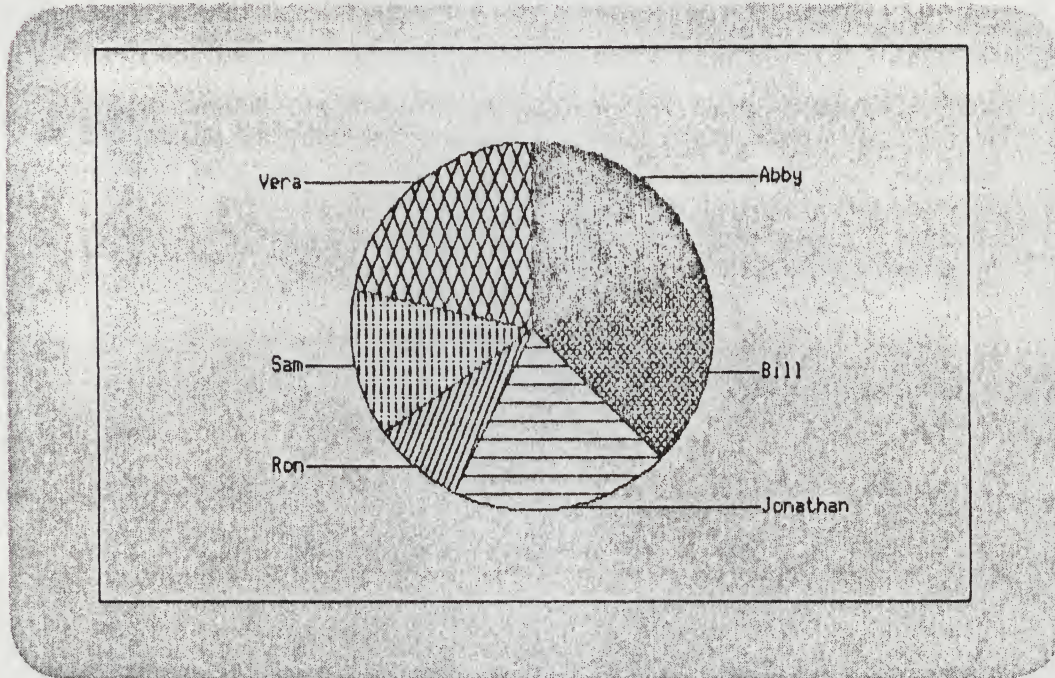
X-axis/Pie Labels

Lets you select the column or row to use for the X-axis or pie chart labels. The PRO/Graph default selection for X-axis and pie labels is column 1. In this case, column 1, which contains the students' names, is the PRO/Graph default. Although it would not be meaningful to do so in this case, you could select any other column to represent the X-axis and pie chart labels. (Note that if you set your graph up in column-by-row format, the PRO/Graph default selection would be row 1, which contains the names of the subjects.)

Key Labels

Allows you to select the column or row to appear in the key labels. You can select any row for the key labels by entering the row number. PRO/Graph's default is row 1. In this case, PRO/Graph's default is the row that contains the names of all the subjects. Although it wouldn't be meaningful to do so in this example, you could select any other row to be the key labels. (Note that if you set your graph up in column-by-row format, PRO/Graph's default would be column 1, which contains the names of all the students. You could change the default to any other column.)

Pie Data

Lets you choose the column to be used for pie chart data. You can select any column of values to be represented by a pie chart. PRO/Graph's default is column 2. In the example, PRO/Graph's default is the column titled "English." If you want to draw a pie chart to represent the data for any other subject, enter the number of the column that contains the subject you want. You would not use column 1 in the example for pie data, because column 1 contains no values. (Note that if you set your graph up in column-by-row format, PRO/Graph's default would be row 2, "Abby." You could change the default to any other student name.)

For example, if you enter 4 (for column 4), PRO/Graph draws a pie chart that represents the history data, as shown below.
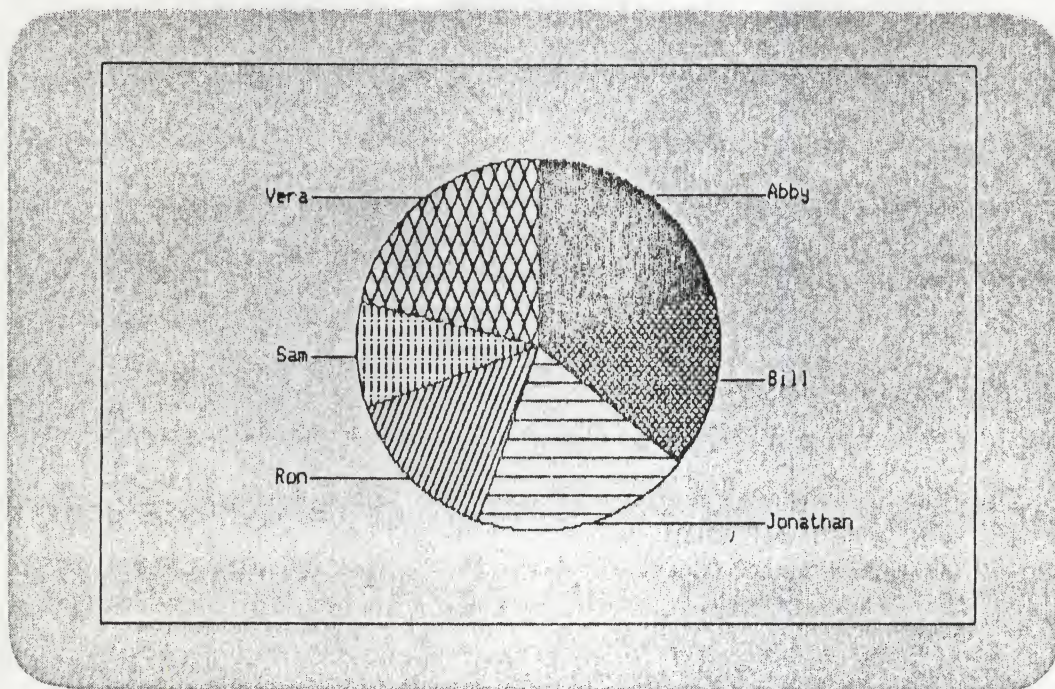
Segment to Separate

Allows you to separate a segment from the pie for emphasis by entering the row number of the segment you want. PRO/Graph's default is none. In other words, no segment will be separated from a pie chart unless you specify that you want one to be separated. In the example, you could choose the data for any student as the segment to separate. The example below shows what happens if you separate the data for Jonathan. (Note that if you set your graph up in column-by-row format, you could select the data for any subject as the segment to separate.)
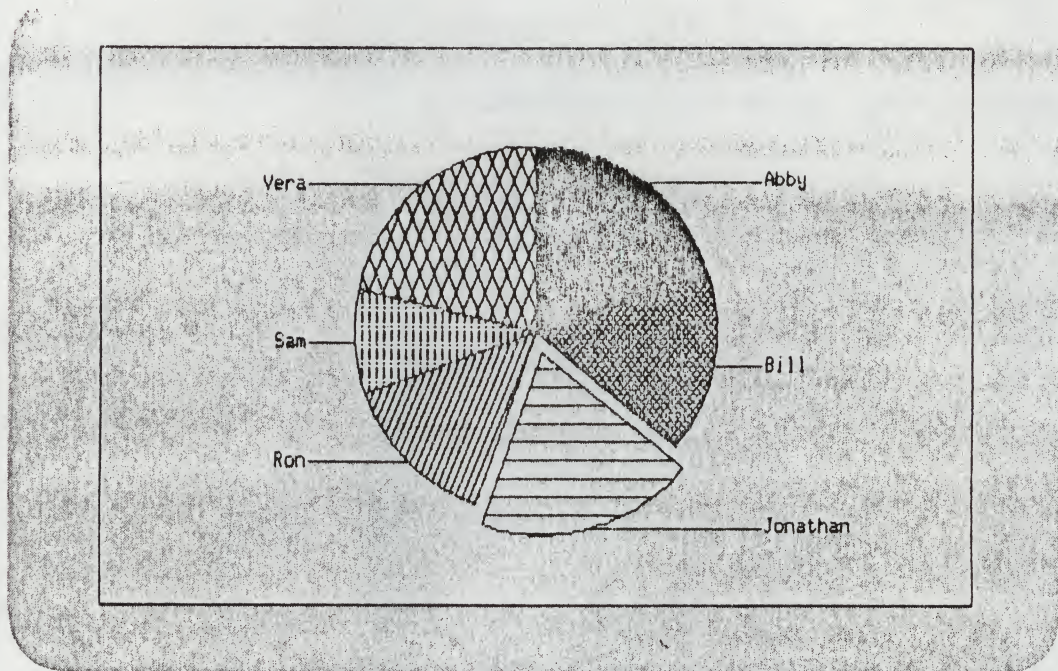
CHANGE PATTERN MENU
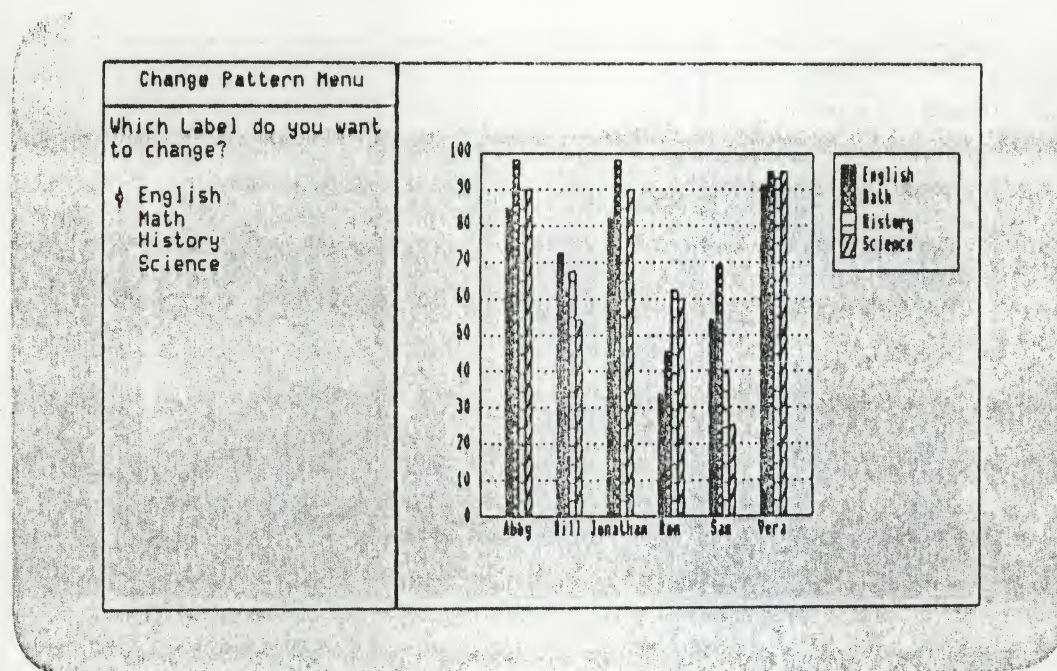
You display the Change Pattern Menu by selecting "Patterns & Colors" from the Design Graph Menu. The Change Pattern Menu allows you to alter the pattern and color (if you are using a color monitor or plotter) for the bars, lines, or segments on your graph. Changing the pattern and color requires a three-step process:

1. Select a label from the Change Pattern Menu.

2. Choose a pattern from the Select Pattern Menu.

3. Select a color from the Select Color Menu.

The Change Pattern Menu is a work screen menu. When you select the Change Pattern Menu, all the key labels that you have entered for your bar or line graph are displayed. If you are working with a pie chart, all segment labels are displayed. To change the pattern associated with a particular label, move the pointer to the label you want, and press DO. The Select Pattern Menu automatically appears.
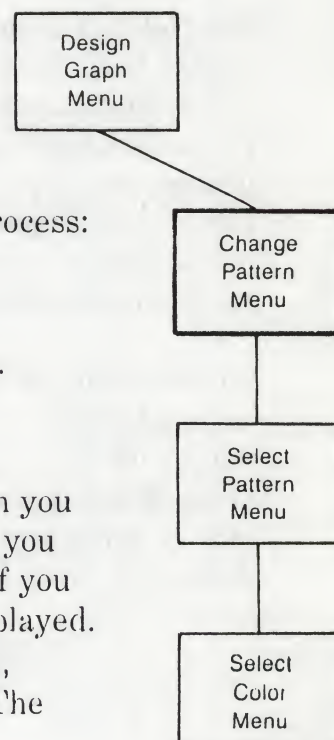
Select Pattern
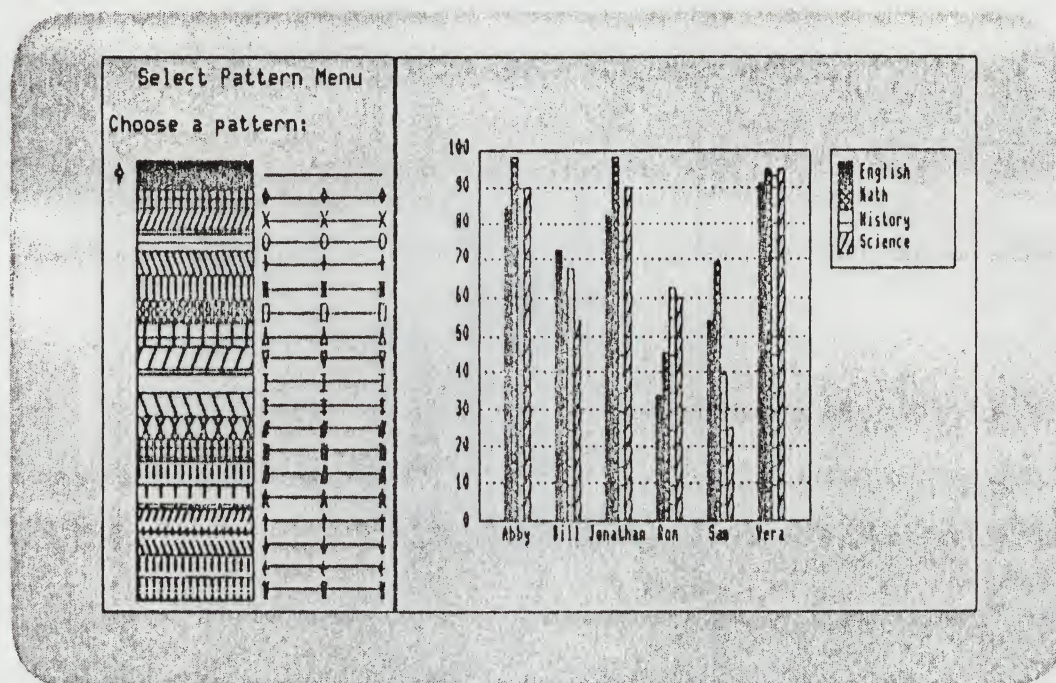
The Select Pattern Menu is displayed when you select a label from the Change Pattern Menu and press DO. It is a work screen menu. The Select Pattern Menu presents a palette of all the patterns available for bar graphs, line graphs, and pie charts. The palette provides columns of fill patterns for bar and line graphs and a column of line patterns for line graphs. When the menu is displayed, the pointer points to the current pattern selection for the label.

To select the pattern that you want to be associated with the label you chose from the Change Pattern Menu, move the pointer to the pattern you want, and press DO. The Select Color Menu is automatically displayed. If you want to change the pattern back to what it was before the menu was displayed, press CANCEL.

Design Graph Menu

Change Pattern Menu

Select Pattern Menu
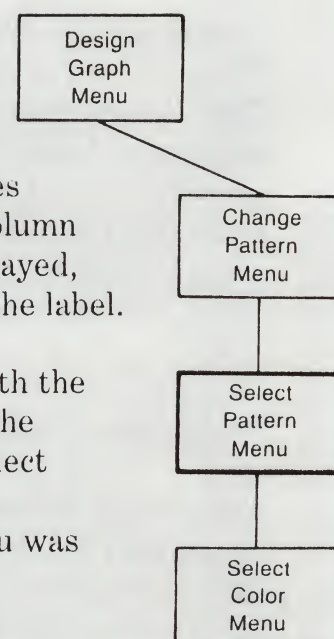
Select Color Menu

Select Color

The Select Color Menu is displayed when you select a pattern from the Select Pattern Menu. The Select Color Menu displays a palette of the colors that are available. It is a work screen menu. From it you can choose the color you want to be associated with the label and pattern that you have chosen. When the menu is displayed, the pointer points to the current color selection for the label. To select the color that you want, move the pointer to the color, and press DO. If you want to change the color back to what it was before the menu was displayed, press CANCEL. Press MAIN SCREEN to return to the PRO/Graph Main Menu.

The presentation of the palette of colors depends on the options on your Professional. If you have the Extended Bit Map Option and a color monitor, the full color menu is displayed. If you have the Extended Bit Map Option and a black and white monitor, the menu appears as shades of gray. If you have neither Extended Bit Map Option nor color monitor, the menu appears in black and white.

```
┌──────────┐
│  Design  │
│  Graph   │
│  Menu    │
└──────────┘
        ┌──────────┐
        │  Change  │
        │ Pattern  │
        │  Menu    │
        └──────────┘
        ┌──────────┐
        │  Select  │
        │ Pattern  │
        │  Menu    │
        └──────────┘
        ┌──────────┐
        │  Select  │
        │  Color   │
        │  Menu    │
        └──────────┘
```
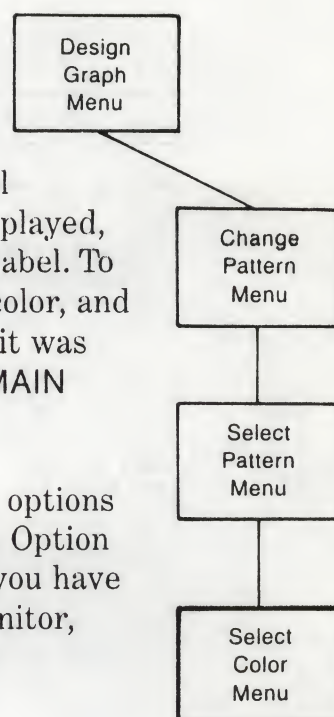
View Final Copy

View Final Copy displays a full screen representation of your graph. Choose this option from the PRO/Graph Main Menu to print a copy of your graph or to check to see how your graph will appear as you have set it up. Make sure you read the section titled "Preparing Your Professional for PRO/Graph" before you print a screen.

Press PRINT SCREEN to obtain a printed copy of your screen. Press any other key to return to the PRO/Graph Main Menu.

If you are using an LA50 printer, you have to set the graphics aspect ratio switch to draw pie charts. To do so, set switch SW 1-5 to the Closed position. (See the *Installing and Using the LA50 Printer* manual for instructions on setting the graphics aspect ratio switch.) If you neglect to set this switch properly, your pie charts will not print out as round circles.

EXIT MENU
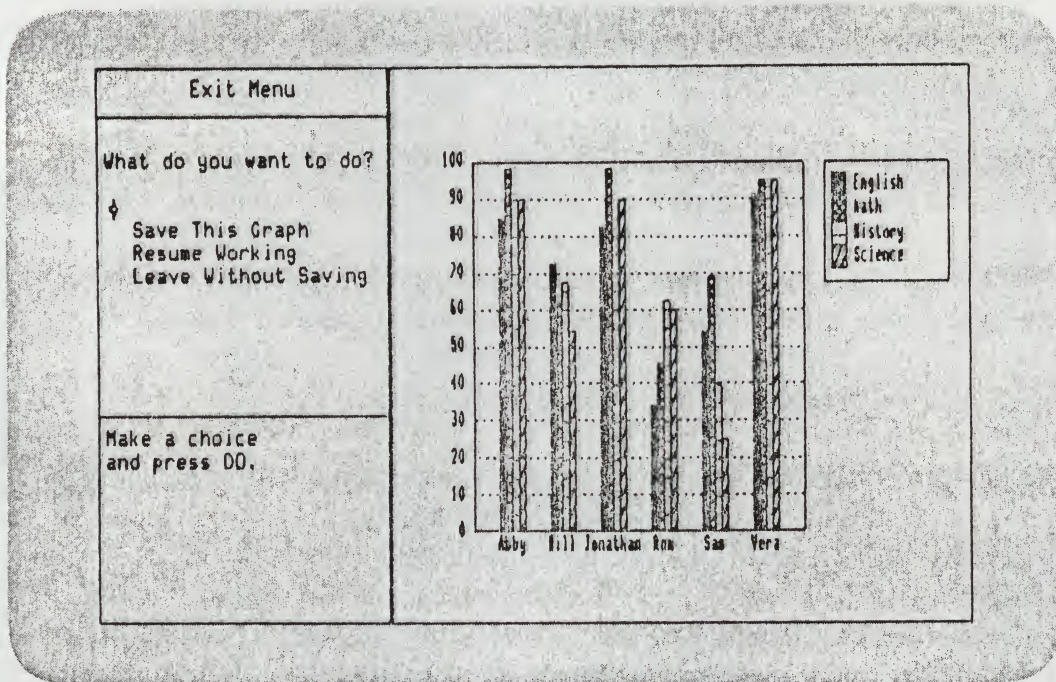
The Exit Menu is displayed when you press EXIT from the PRO/Graph Main Menu. The Exit Menu is used to end your current editing session. It is a work screen menu. To choose an option, move the pointer to the option you want, and press DO. The Exit Menu has three choices:

☐ *Save This Graph*—When you choose this option, PRO/Graph saves all changes to the graph you were working on. The Name a File Form is displayed so that you can name the file. (The Name a File Form is described in detail in the *Professional 300 Series User's Guide for Hard Disk System.*)

☐ *Resume Working*—When you choose this option, you can continue to work on the graph you were editing. The PRO/Graph Main Menu is redisplayed.

☐ *Leave Without Saving*—When you choose this option, none of the changes to the graph you were working on are saved. PRO/Graph displays the Confirm Exit Menu.
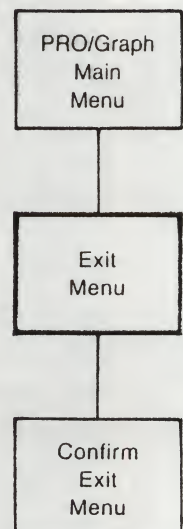
CONFIRM EXIT MENU
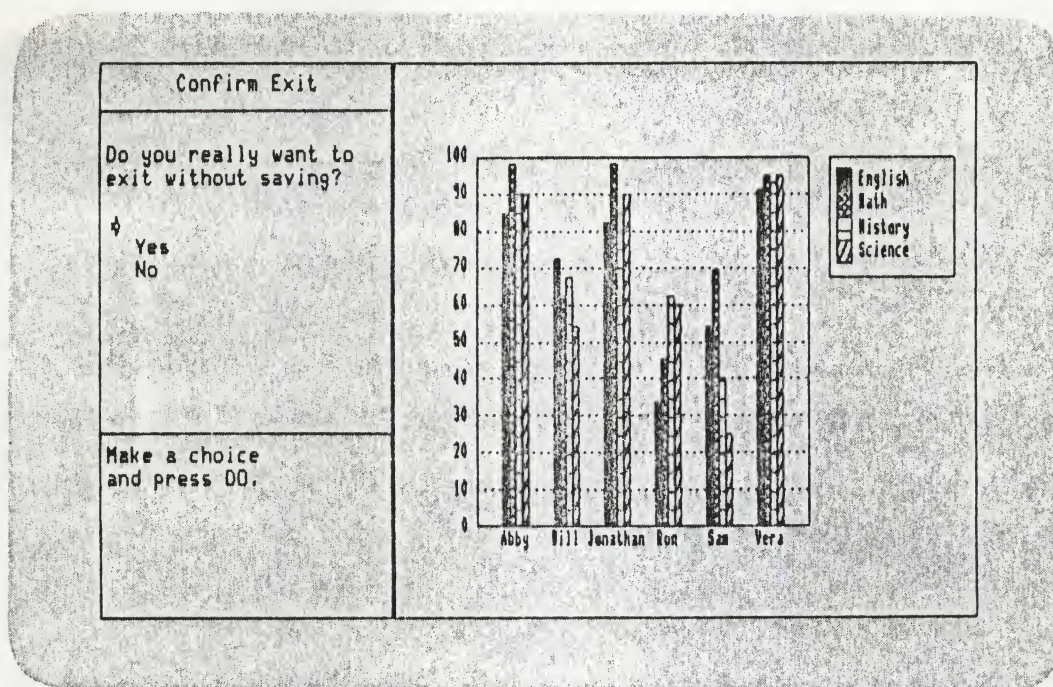
The Confirm Exit Menu is displayed when you select "Leave Without Saving" from the Exit Menu. This menu asks you if you really do not want to save any of the changes from your PRO/Graph session. If you choose "Yes" (you DO want to exit without saving changes), PRO/Graph displays the Entry Menu. From here, you can press EXIT to return to the P/OS Main Menu, or you can choose a selection from the Entry Menu. If you choose "No" (you want to save the changes), PRO/Graph redisplays the Exit Menu for you to make another selection.
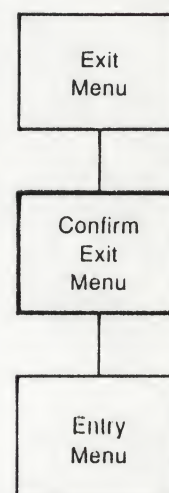
Glossary

Cell

The intersection of a row and a column on the Data Grid. You enter labels and numbers into cells, as described in the section called "Data Grid."

Column-by-row Format

"Column by row" is one of the options available on the Graphic Options Checklist. PRO/Graph plots the graph using the data presented in the Data Grid. When the graph is plotted in column-by-row format, the items in a specified row of the Data Grid appear as labels in the X-axis for bar and line graphs. On a pie chart, the items in the specified row appear as the labels for the pie segments. Items that appear in the columns underneath the selected row on the Data Grid are plotted along the Y-axis to make the graph.

The items in the specified column of the Data Grid appear as key labels on bar and line graphs. These items are also the items from which you can choose the data to be represented by a pie chart.

(Note that the Design Graph Menu lets you specify the column and row you want PRO/Graph to use for labels and pie data. The PRO/Graph defaults are column 1 and row 1.)

Command Line

The command line is a list of command choices (Edit, Insert, and Remove) that appears on the Data Grid when you press the backslash (\ ) key or the ADDTNL OPTIONS key.

Default

A default is any information that PRO/Graph assumes as input if you do not explicitly provide information.

Edit Mode

Edit Mode is the way that you modify existing information in a Data Grid cell. To enter Edit Mode from the Data Grid, press the backslash (\ ) key or the ADDTNL OPTIONS key and type an E.

Row-by-column Format

"Row by column" is one of the options available on the Graphic Options Checklist. PRO/Graph plots the graph using the data presented in the Data Grid. When the graph is plotted in row-by-column format (PRO/Graph's default), the items in a specified column of the Data Grid appear as labels in the X-axis for bar and line graphs. On a pie chart, the items in the column appear as the labels for the pie segments. Items that appear in the rows beside the selected column on the Data Grid are plotted along the Y-axis to make the graph.

The items in the specified row of the Data Grid appear as key labels on bar and line graphs. These items are also the items from which you can choose the data to be represented by a pie chart.

(Note that the Design Graph Menu lets you choose the column and row you want PRO/Graph to use for labels and pie data. The PRO/Graph defaults are column 1 and row 1.)

Table files

Table files are files that are created by PRO/Graph, PRO/Spreadsheet, or PRO/DataManager. All table files have a .TAB extension. PRO/Graph automatically creates table files. You can direct PRO/Spreadsheet and PRO/DataManager to create table files as well. PRO/Graph can plot a graph for any table file that contains numeric information.

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